### APPENDIX G

INTERCONNECT DIAGRAMS
AND
INFORMATION FLOWS DIAGRAMS
(FROM TURBO ARCHITECTURE TOOL)

The diagrams in this file fall in alphabetical order by Stakeholder name, and the Stakeholders' respective Associated Architecture Element(s). Please follow that order to find a specific diagram.

As a general rule, the stakeholder/associated element for which the diagram represents, is shown in the upper left of the diagram; with the other related stakeholders/associated elements appearing below and to the right of the primary stakeholder/associated element.

For the more complex diagrams, the stakeholder/associated element for which the diagram represents is shown in the center of the diagram; with the other related stakeholders/associated elements surrounding the primary stakeholder/associated element.

Certain of the diagrams are very complex and have been inserted into this Appendix on 11x17 size paper. Even with this increase in paper size some of those diagrams are not readable at this size. Wherever this is the case, those diagrams have been plotted in a large "engineering drawing" format (D (22"x34") or E (34"x44") size, as appropriate) and distributed to the directly affected Stakeholders. These plots can also be made available for viewing to other interested Stakeholders in the.

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Stakeholder: AC Transit

Architecture Element: AC Transit Next Bus Arrival System

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AC Transit
AC Transit Operations System

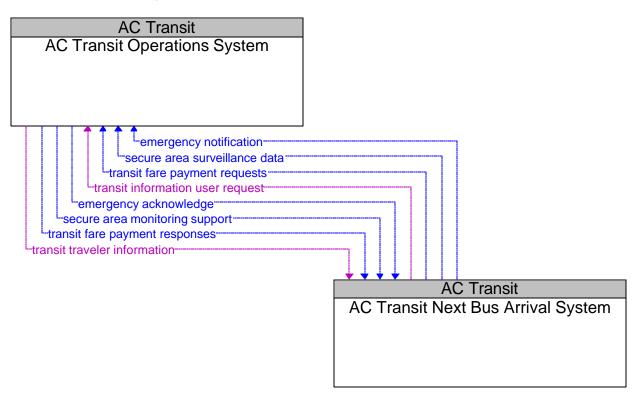
AC Transit
AC Transit Next Bus Arrival System

Existing Planned

Stakeholder: AC Transit

Architecture Element: AC Transit Next Bus Arrival System

**Information Flows Diagram** 



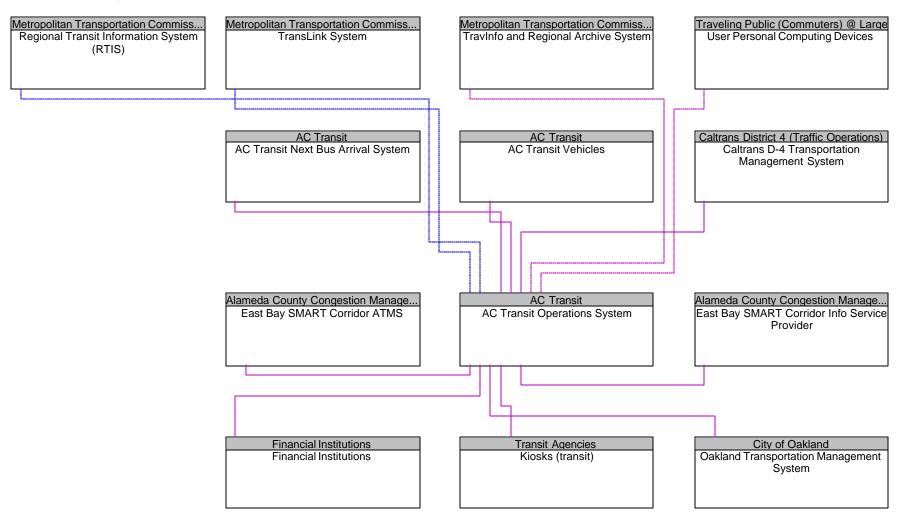
---- Planned

Existing

Stakeholder: AC Transit

Architecture Element: AC Transit Operations System

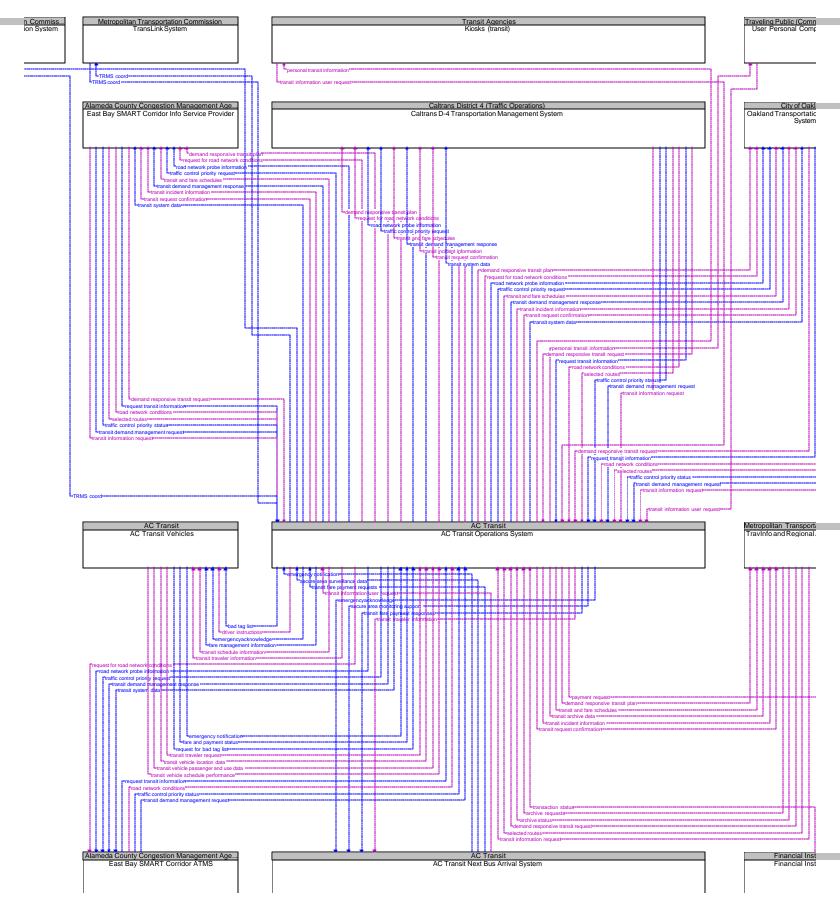
**Interconnect Diagram** 



nolder: AC Transit

ecture Element: AC Transit Operations System

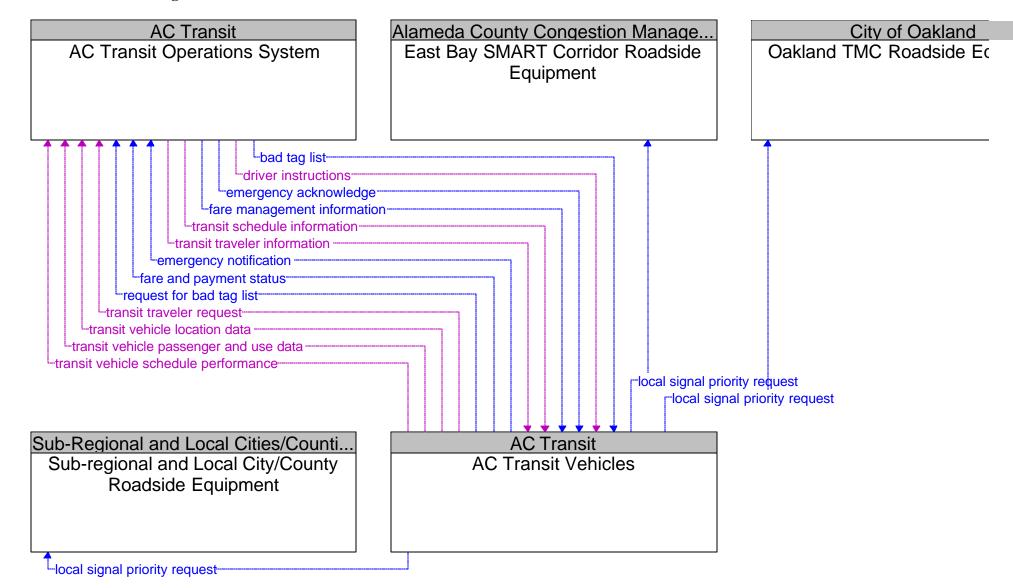
nation Flows Diagram



Stakeholder: AC Transit Architecture Element: **AC Transit Vehicles Interconnect Diagram** AC Transit Alameda County Congestion Manage... City of Oakland AC Transit Operations System East Bay SMART Corridor Roadside Oakland TMC Roadside Equipment Equipment Sub-Regional and Local Cities/Counti... AC Transit Sub-regional and Local City/County AC Transit Vehicles Roadside Equipment

Existing Planned

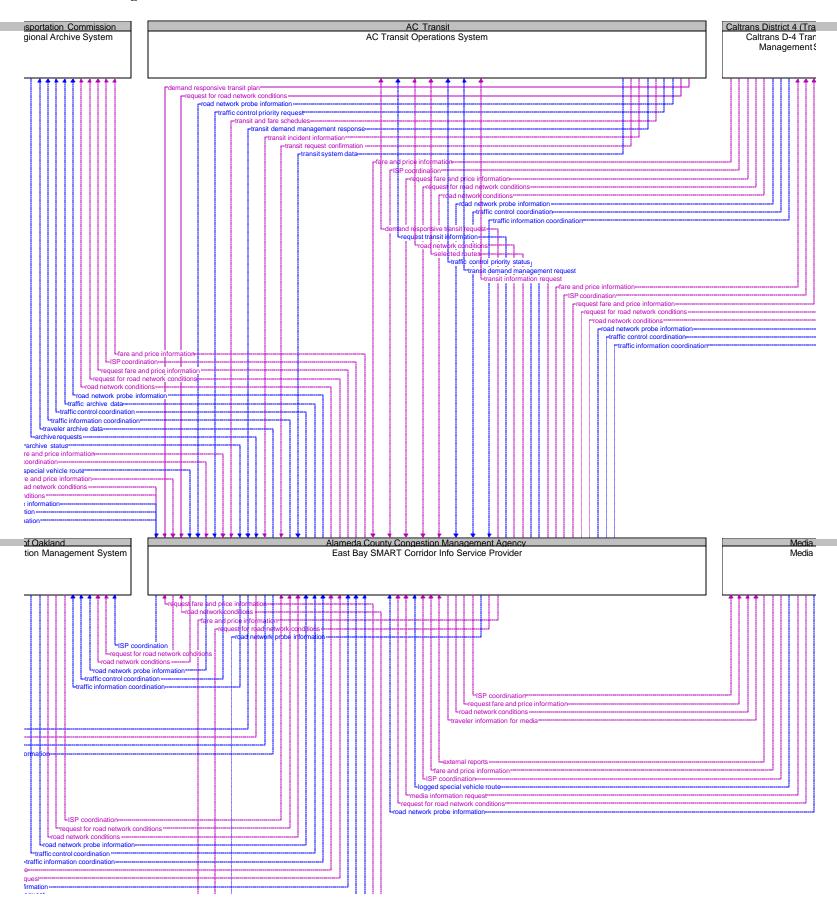
Architecture Element: AC Transit Vehicles



Stakeholder: **Alameda County Congestion Management Agency** Architecture Element: **East Bay SMART Corridor Info Service Provider Interconnect Diagram** AC Transit Caltrans District 4 (Traffic Operations) Alameda County Congestion Manage... AC Transit Operations System Caltrans D-4 Transportation East Bay SMART Corridor ATMS Management System Alameda County Congestion Manage... Media City of Oakland East Bay SMART Corridor Info Service Oakland Transportation Management Media Provider System Metropolitan Transportation Commiss... Traveling Public (Commuters) @ Large TravInfo and Regional Archive System User Personal Computing Devices

nolder: Alameda County Congestion Management Agency ecture Element: East Bay SMART Corridor Info Service Provider

nation Flows Diagram



Architecture Element: East Bay SMART Corridor Roadside Equipment
Interconnect Diagram

AC Transit
AC Transit Vehicles

Alameda County Congestion Manage...

East Bay SMART Corridor ATMS

Alameda County Congestion Manage...

East Bay SMART Corridor Roadside

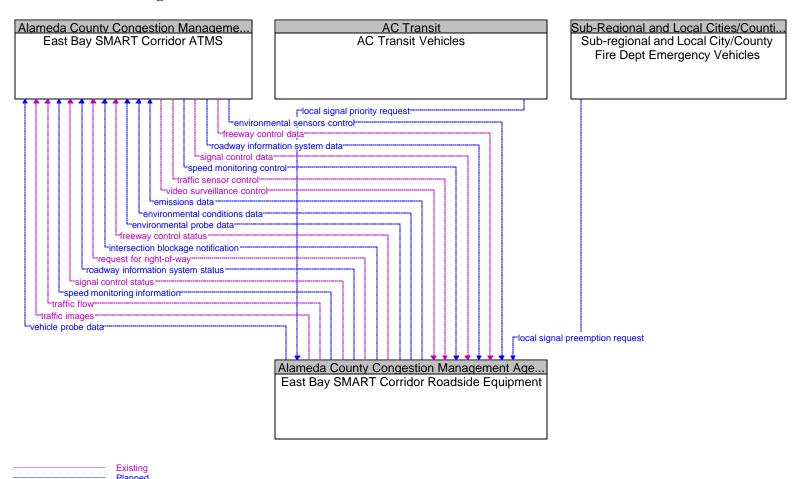
Equipment

Existing
Planned

**Alameda County Congestion Management Agency** 

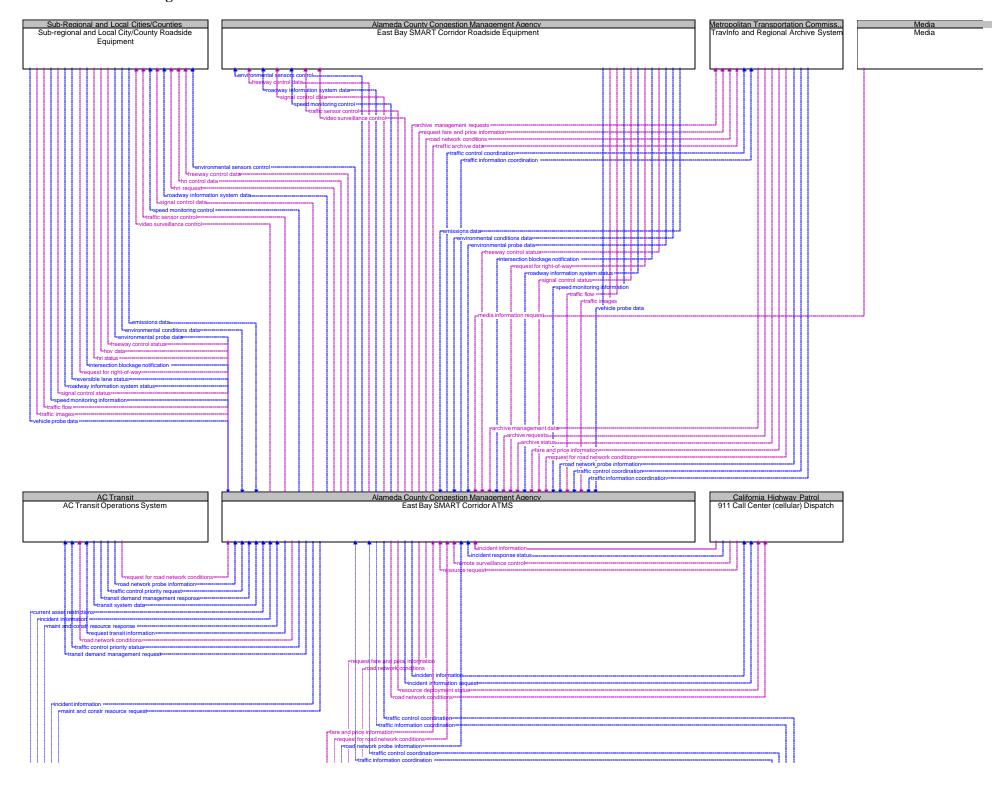
Stakeholder:

Stakeholder: Alameda County Congestion Management Agency
Architecture Element: East Bay SMART Corridor Roadside Equipment



Stakeholder: **Alameda County Congestion Management Agency** Architecture Element: **East Bay SMART Corridor ATMS Interconnect Diagram** California Highway Patrol Caltrans District 4 (Traffic Operations) AC Transit Metropolitan Transportation Commiss... AC Transit Operations System 911 Call Center (cellular) Dispatch Bay Area Incident Response System TravInfo and Regional Archive System (BAIRS) Alameda County Congestion Manage... Alameda County Congestion Manage... Alameda County Congestion Manage... East Bay SMART Corridor Info Service East Bay SMART Corridor ATMS East Bay SMART Corridor Roadside Provider Equipment Sub-Regional and Local Cities/Counti... Sub-Regional and Local Cities/Counti... Media Sub-regional and Local City/County Sub-regional and Local City/County Media Roadside Equipment Traffic Operations Systems

Existing



Stakeholder:	Bay Area Rapid Trans	it Distric	et
Architecture Element:	BART Message Station System		
<b>Interconnect Diagram</b>			
Bay Area Rapid	d Transit District		
	Operations System		
L			
			Bay Area Rapid Transit District
			BART Message Station System
			DAINT Message Station System
_	e espera		
	Existing		
	Planned		

Stakeholder: Bay Area Rapid Transit District
Architecture Element: BART Message Station System

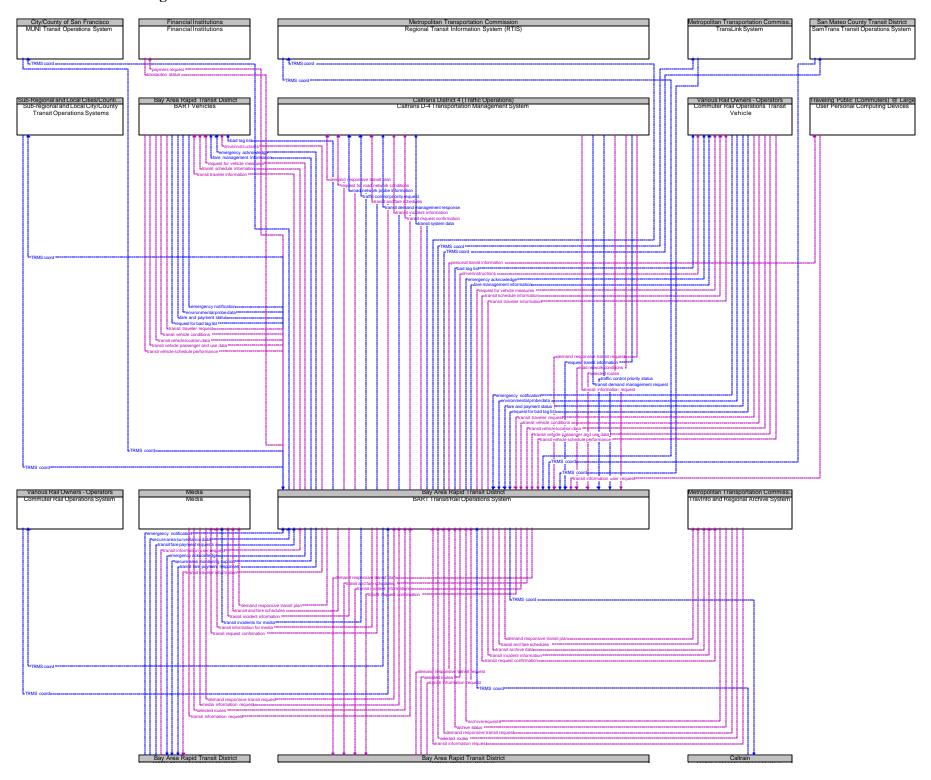
**Information Flows Diagram** 

# Bay Area Rapid Transit District BART Transit/Rail Operations System

emergency notification
secure area surveillance data
transit fare payment request
transit information user request
emergency acknowledge
secure area monitoring support
transit fare payment responses
transit traveler information

Bay Area Rapid Transit District BART Message Station System

**Bay Area Rapid Transit District** Stakeholder: Architecture Element: **BART Transit/Rail Operations System Interconnect Diagram** Metropolitan Transportation Commiss...
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Stakeholder: Bay Area Rapid Transit District

Architecture Element: BART Vehicles

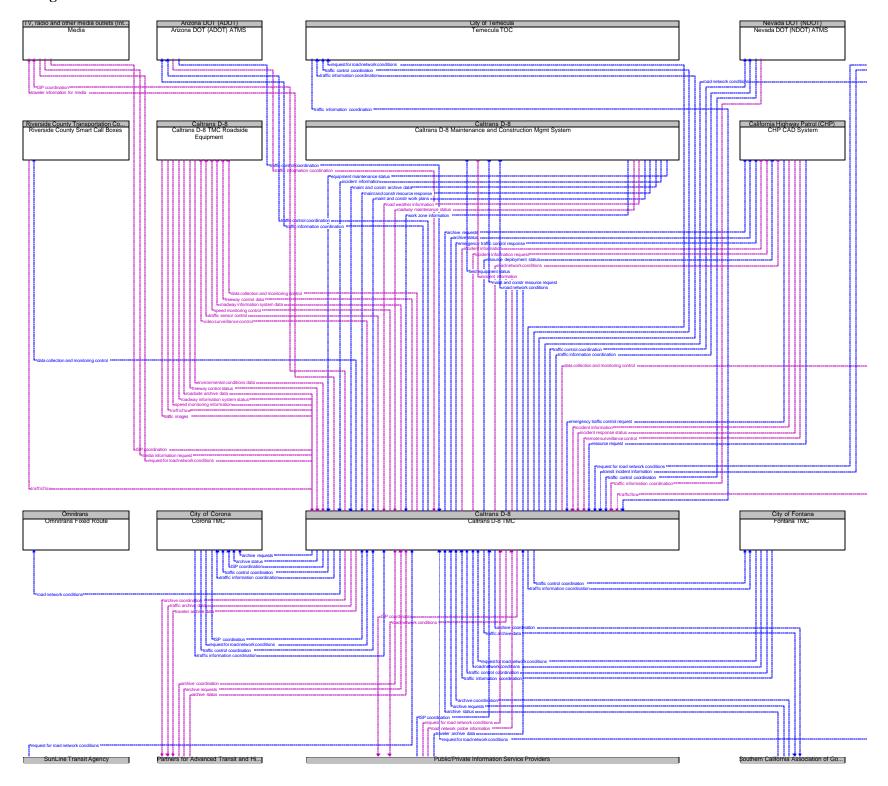
**Interconnect Diagram** 

Bay Area Rapid Transit District BART Vehicles

Bay Area Rapid Transit District
BART Transit/Rail Operations System

Existing Planned

Architecture Element: **BART Vehicles** 

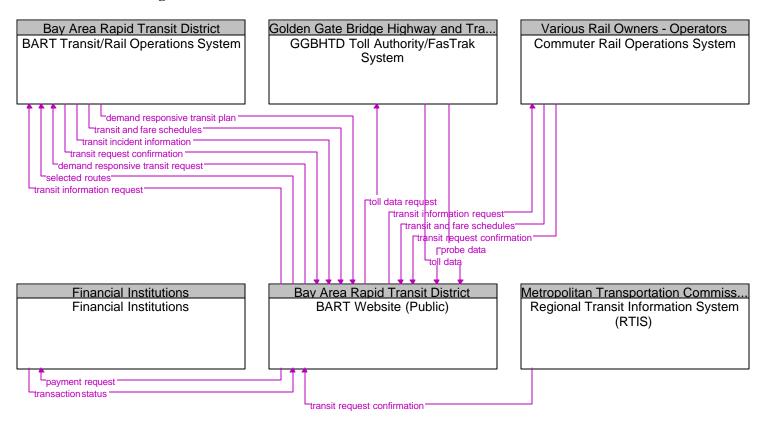


Stakeholder: **Bay Area Rapid Transit District** Architecture Element: **BART Website (Public) Interconnect Diagram** Bay Area Rapid Transit District Various Rail Owners - Operators Financial Institutions BART Transit/Rail Operations System Commuter Rail Operations System Financial Institutions Golden Gate Bridge Highway and Tra... Bay Area Rapid Transit District Metropolitan Transportation Commiss... Regional Transit Information System GGBHTD Toll Authority/FasTrak BART Website (Public) System (RTIS)

Existing Planner

Stakeholder: Bay Area Rapid Transit District

Architecture Element: **BART Website** (Public)



Stakeholder: Architecture Element: CVO Administration (Pre -Pass)

Interconnect Diagram

Caltrans Headquarters
CVO Weigh Stations (Pre-Pass)

Financial Institutions
Financial Institutions

California Department of Motor Vehicl...

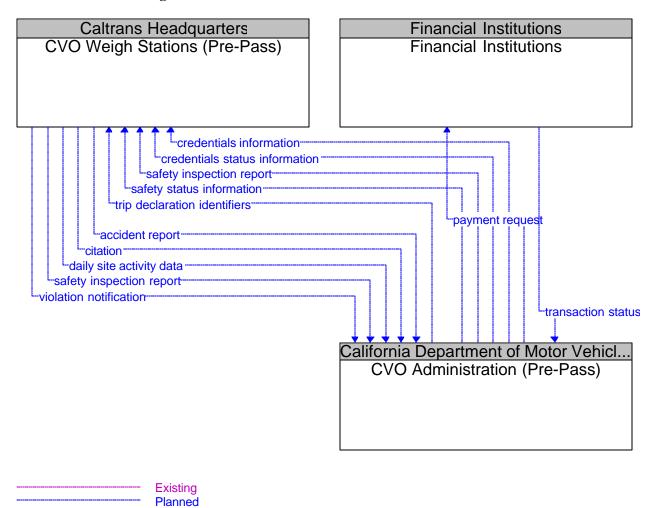
CVO Weigh Stations (Pre-Pass)

California Department of Motor Vehicl...

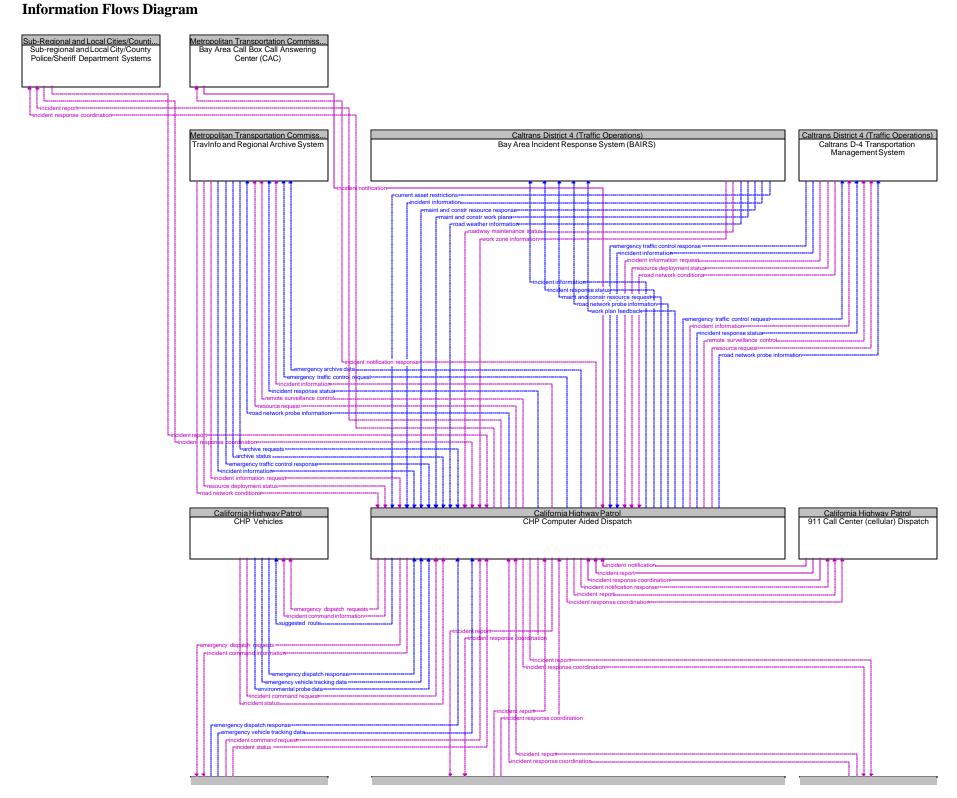
CVO Administration (Pre-Pass)

Stakeholder: California Department of Motor Vehicles (DMV)

Architecture Element: **CVO Administration (Pre -Pass)** 



Stakeholder: California Highway Patrol Architecture Element: **CHP Computer Aided Dispatch Interconnect Diagram** Sub-Regional and Local Cities/Counti... Metropolitan Transportation Commiss... Sub-regional and Local City/County TravInfo and Regional Archive System Police/Sheriff Department Systems California Highway Patrol Metropolitan Transportation Commiss... Caltrans District 4 (Traffic Operations) 911 Call Center (cellular) Dispatch Bay Area Call Box Call Answering Bay Area Incident Response System Center (CAC) (BAIRS) Caltrans District 4 (Traffic Operations) California Highway Patrol California Highway Patrol Caltrans D-4 Transportation CHP Computer Aided Dispatch CHP Vehicles Management System Metropolitan Transportation Commiss... Metropolitan Transportation Commiss... Sub-Regional and Local Cities/Counti... Freeway Service Patrol (FSP) FSP Tow Trucks Sub-regional and Local City/County Fire Department Systems



Stakeholder: California Highway Patrol
Architecture Element: CHP Vehicles
Interconnect Diagram

Caltrans District 4 (Traffic Operations)
Caltrans D-4 TMC Roadside
Equipment (TOS)

California Highway Patrol
CHP Computer Aided Dispatch

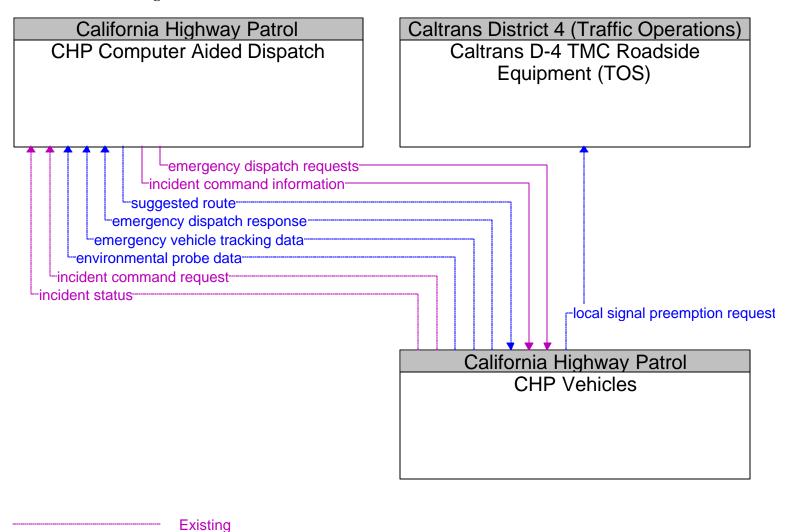
California Highway Patrol
CHP Vehicles

California Highway Patrol
CHP Vehicles

Stakeholder: California Highway Patrol

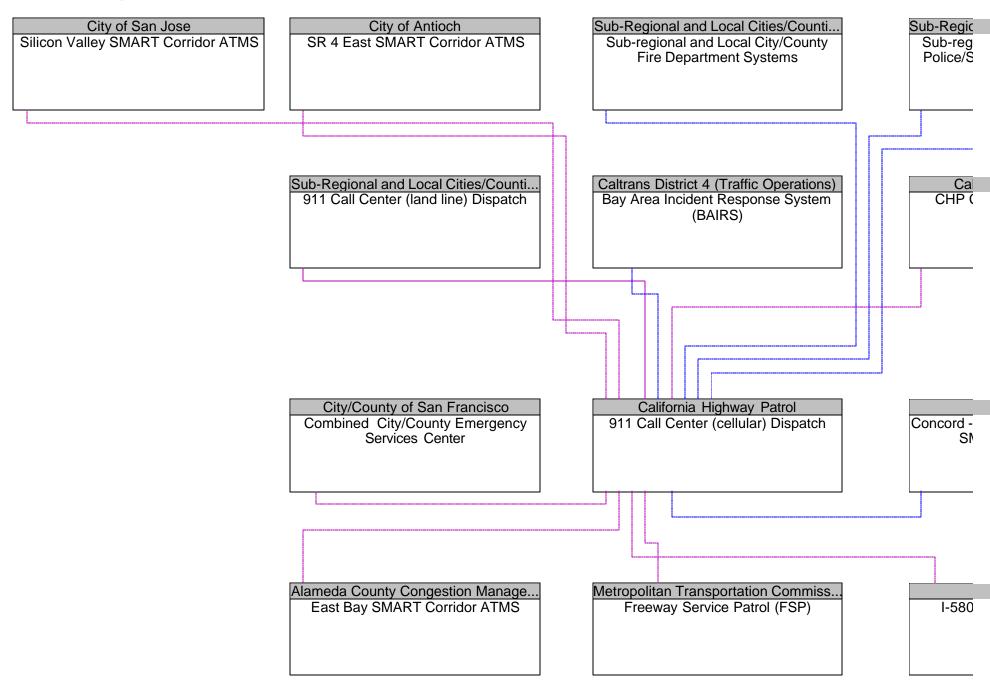
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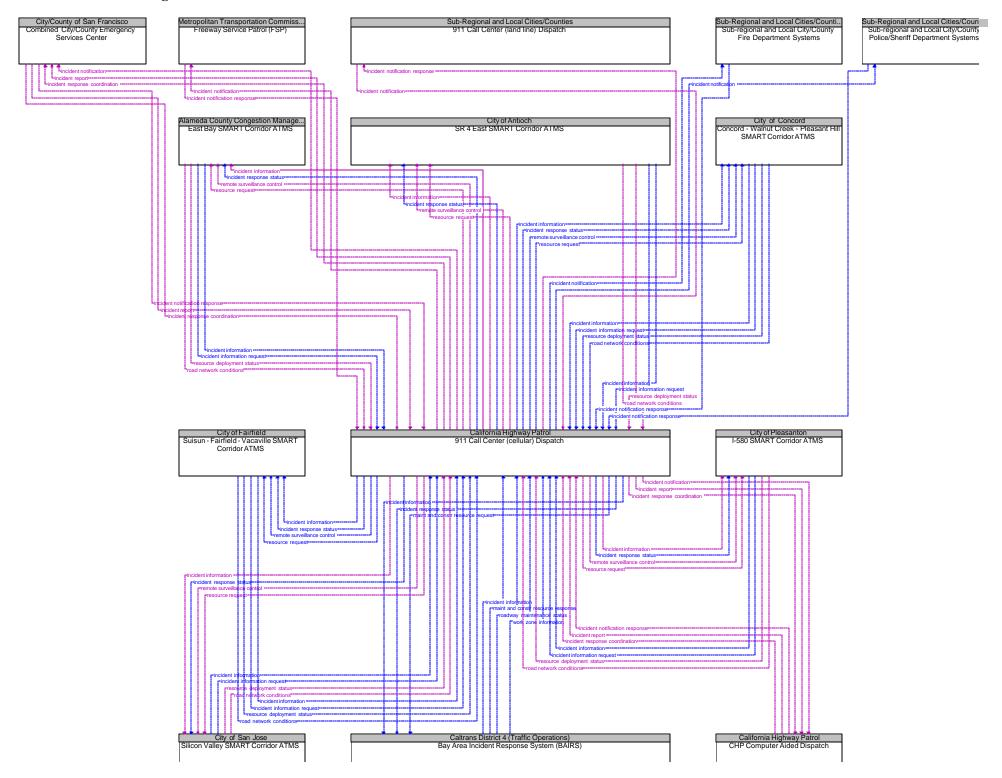
Architecture Element: **CHP Vehicles** 



Architecture Element: 911 Call Center (cellular) Dispatch

**Interconnect Diagram** 





Stakeholder: Caltrain

Architecture Element: Caltrain Rail Center Next Train Displays

**Interconnect Diagram** 

Caltrain
Caltrain Rail Operations System

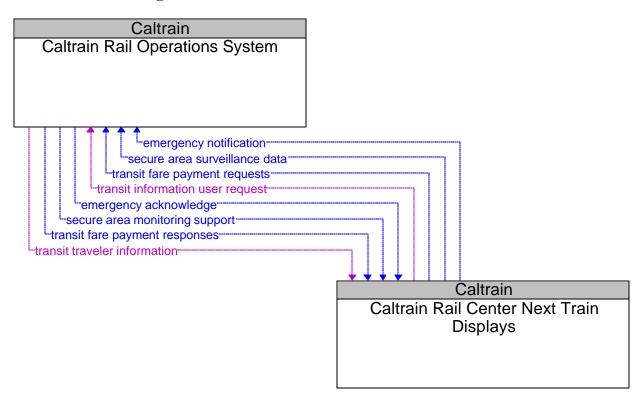
Caltrain
Caltrain Rail Center Next Train
Displays

Existing Planned

Stakeholder: Caltrain

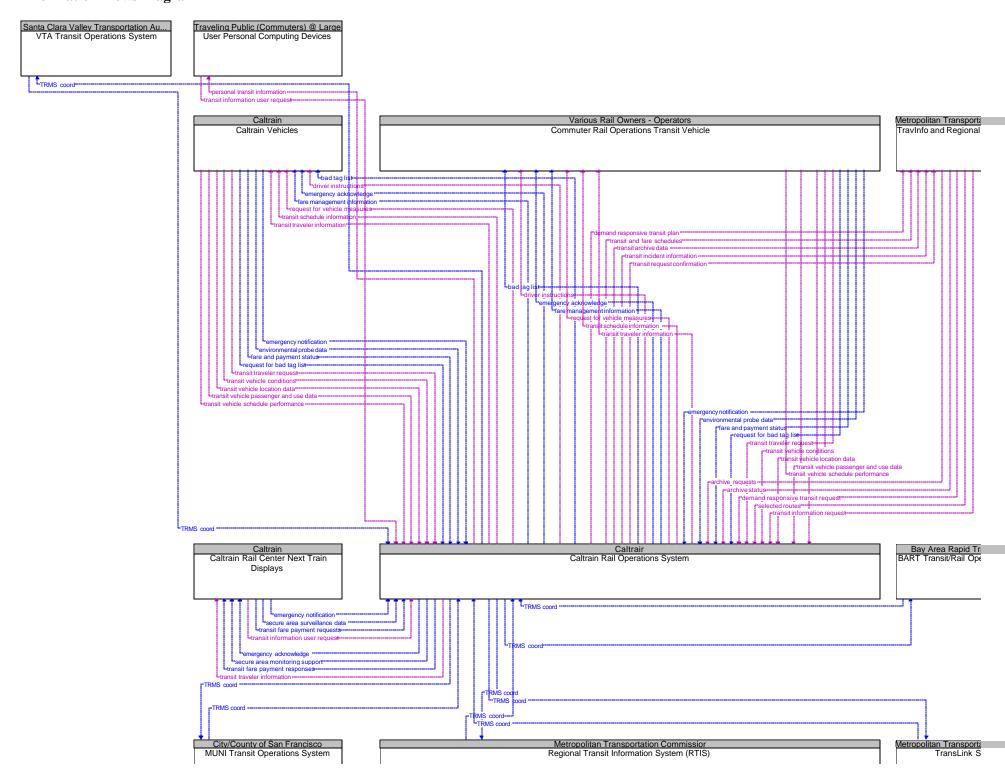
Architecture Element: Caltrain Rail Center Next Train Displays

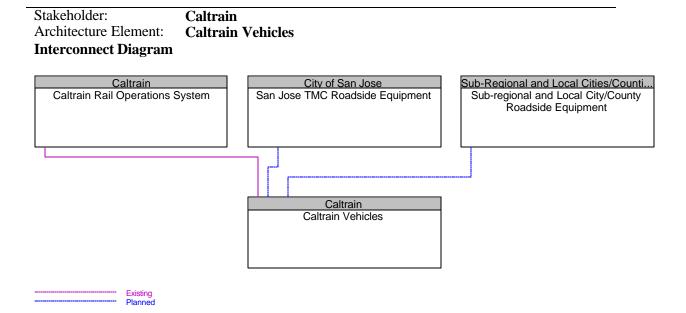
**Information Flows Diagram** 



----- Existing Planned

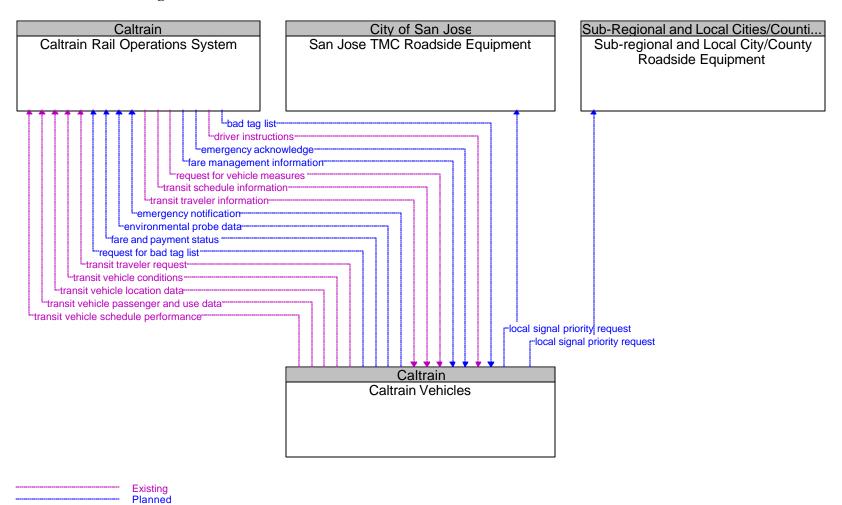
Stakeholder: Caltrain Architecture Element: **Caltrain Rail Operations System Interconnect Diagram** Traveling Public (Commuters) @ Large Santa Clara Valley Transportation Au... User Personal Computing Devices VTA Transit Operations System Bay Area Rapid Transit District Caltrain Caltrain BART Transit/Rail Operations System Caltrain Rail Center Next Train Caltrain Vehicles Displays Various Rail Owners - Operators Caltrain City/County of San Francisco Commuter Rail Operations Transit Caltrain Rail Operations System MUNI Transit Operations System Vehicle Metropolitan Transportation Commiss... Metropolitan Transportation Commiss... Metropolitan Transportation Commiss... TravInfo and Regional Archive System Regional Transit Information System TransLink System (RTIS)





Stakeholder: Caltrain

Architecture Element: Caltrain Vehicles



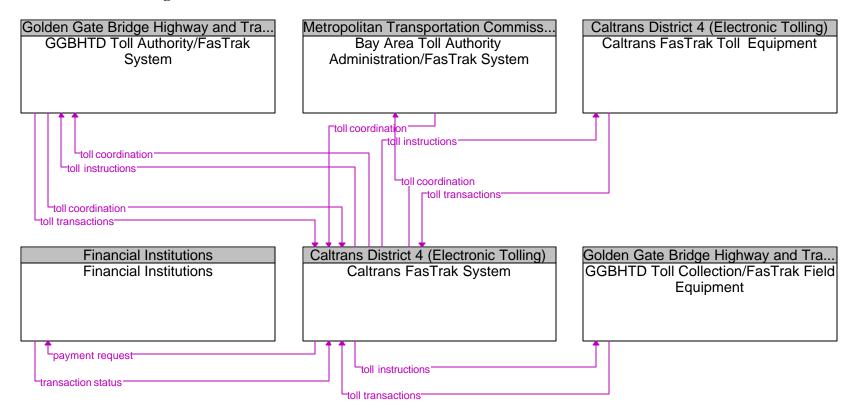
Stakeholder: **Caltrans District 4 (Electronic Tolling)** Architecture Element: Caltrans FasTrak System **Interconnect Diagram** Metropolitan Transportation Commiss... Financial Institutions Caltrans District 4 (Electronic Tolling) Bay Area Toll Authority Caltrans FasTrak Toll Equipment Financial Institutions Administration/FasTrak System Golden Gate Bridge Highway and Tra... Golden Gate Bridge Highway and Tra... Caltrans District 4 (Electronic Tolling) GGBHTD Toll Authority/FasTrak GGBHTD Toll Collection/FasTrak Field Caltrans FasTrak System System Equipment

Existin

Stakeholder: Caltrans District 4 (Electronic Tolling)

Architecture Element: Caltrans FasTrak System

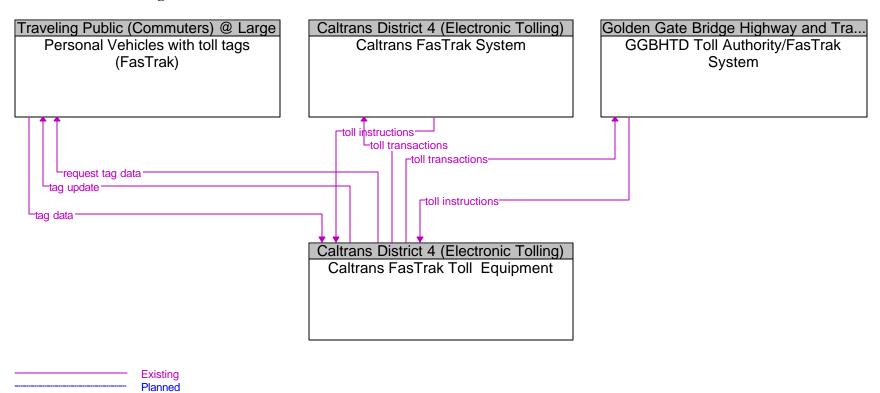
**Information Flows Diagram** 



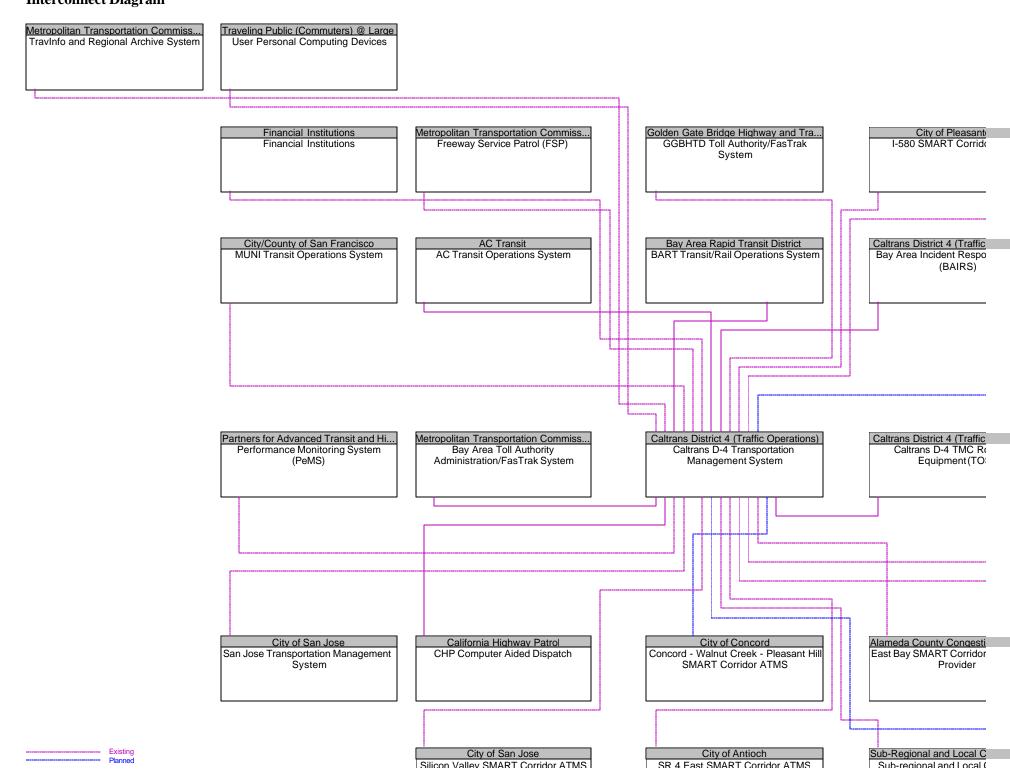
Existing Planne

Stakeholder: Caltrans District 4 (Electronic Tolling) Architecture Element: Caltrans FasTrak Toll Equipment **Interconnect Diagram** Caltrans District 4 (Electronic Tolling) Golden Gate Bridge Highway and Tra... Traveling Public (Commuters) @ Large Caltrans FasTrak System GGBHTD Toll Authority/FasTrak Personal Vehicles with toll tags System (FasTrak) Caltrans District 4 (Electronic Tolling) Caltrans FasTrak Toll Equipment Existing Planned

Stakeholder: Caltrans District 4 (Electronic Tolling)
Architecture Element: Caltrans FasTrak Toll Equipment

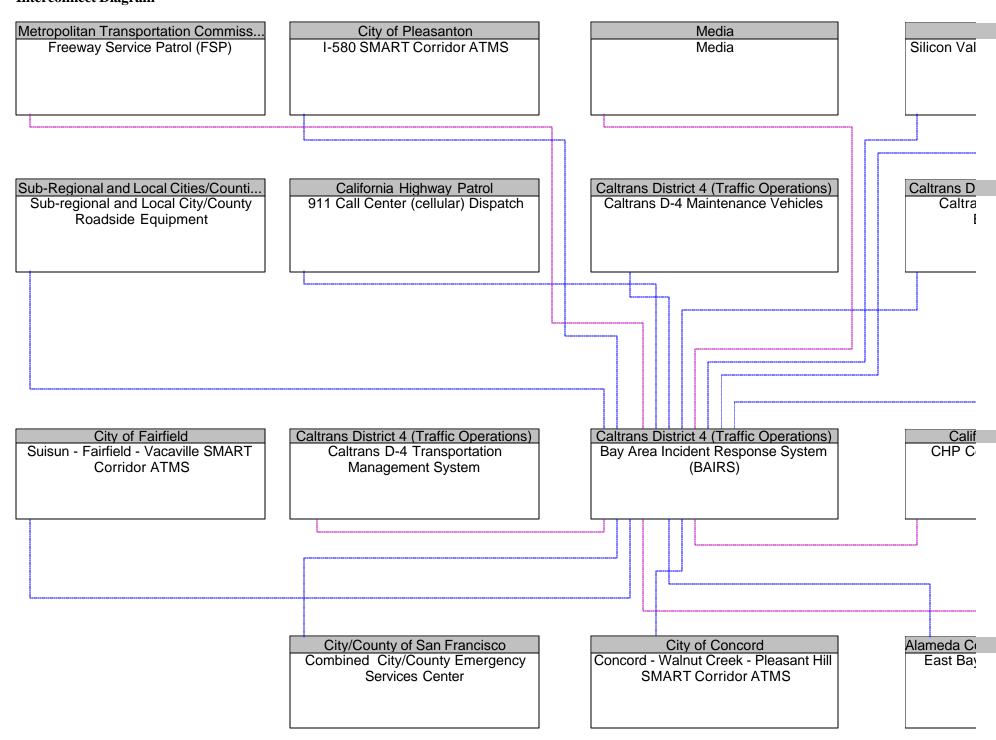


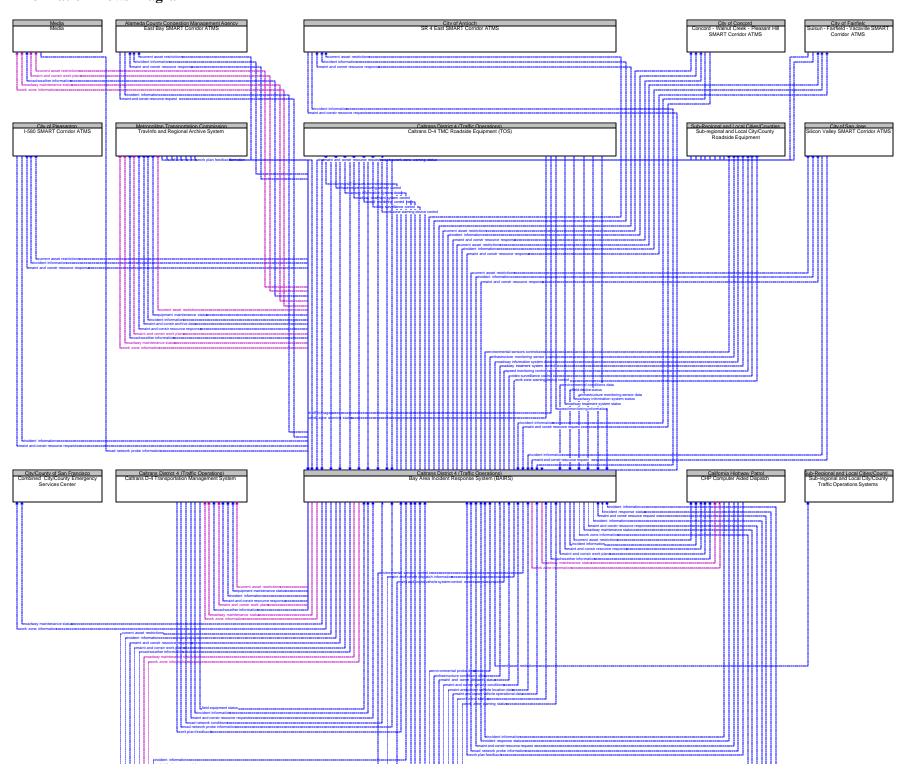
# Architecture Element: Caltrans D-4 Transportation Management System Interconnect Diagram





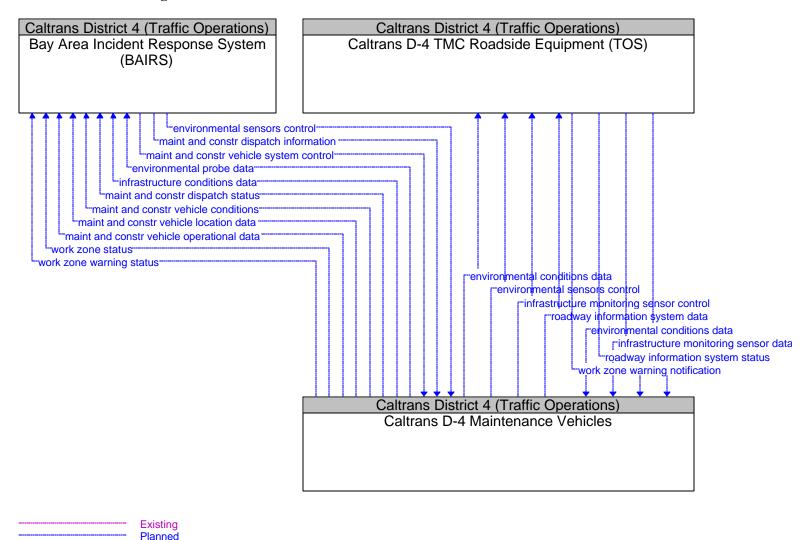
Existing



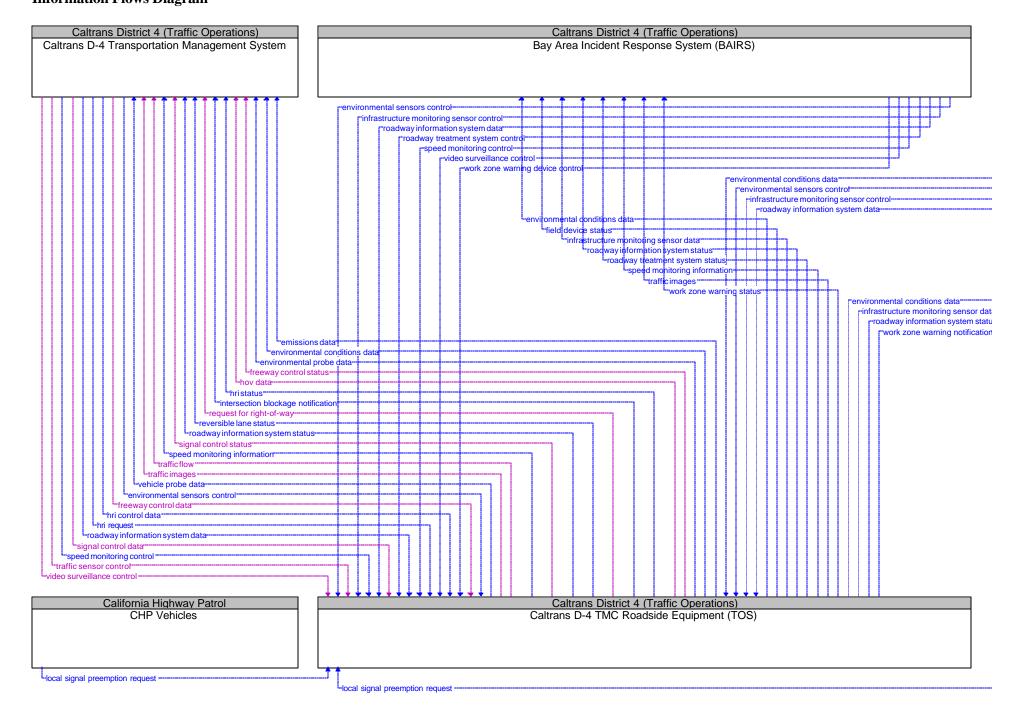


Stakeholder: **Caltrans District 4 (Traffic Operations)** Architecture Element: **Caltrans D-4 Maintenance Vehicles Interconnect Diagram** Caltrans District 4 (Traffic Operations) Caltrans District 4 (Traffic Operations) Bay Area Incident Response System Caltrans D-4 TMC Roadside Equipment (TOS) (BAIRS) Caltrans District 4 (Traffic Operations) Caltrans D-4 Maintenance Vehicles **Existing Planned** 

Stakeholder: Caltrans District 4 (Traffic Operations)
Architecture Element: Caltrans D-4 Maintenance Vehicles



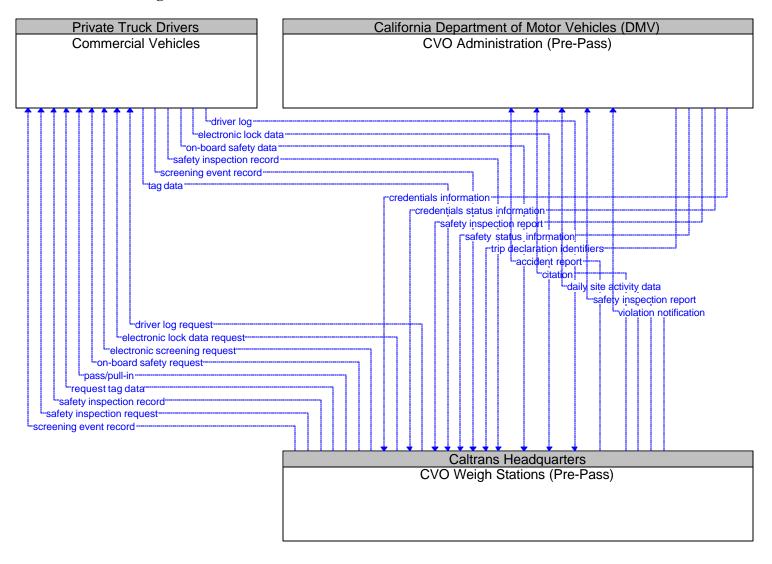
Stakeholder: **Caltrans District 4 (Traffic Operations)** Architecture Element: **Caltrans D-4 TMC Roadside Equipment (TOS) Interconnect Diagram** Caltrans District 4 (Traffic Operations) Caltrans District 4 (Traffic Operations) Caltrans District 4 (Traffic Operations) Bay Area Incident Response System Caltrans D-4 Maintenance Vehicles Caltrans D-4 Transportation (BAIRS) Management System California Highway Patrol Caltrans District 4 (Traffic Operations) Metropolitan Transportation Commiss... CHP Vehicles Caltrans D-4 TMC Roadside FSP Tow Trucks Equipment (TOS)



Stakeholder: **Caltrans Headquarters** Architecture Element: **CVO Weigh Stations (Pre-Pass) Interconnect Diagram** California Department of Motor Vehicl... **Private Truck Drivers** CVO Administration (Pre-Pass) **Commercial Vehicles** Caltrans Headquarters CVO Weigh Stations (Pre-Pass) **Existing** Planned

Stakeholder: Caltrans Headquarters

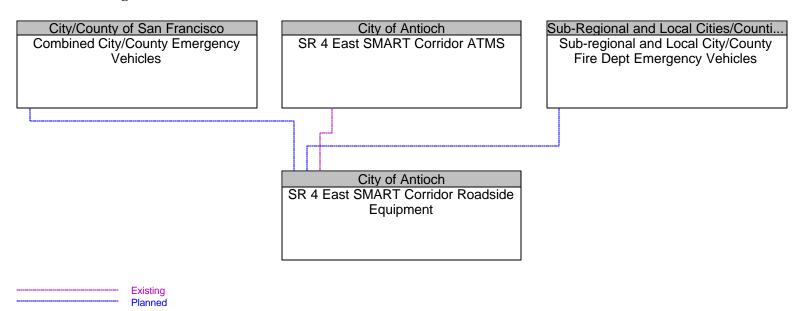
Architecture Element: CVO Weigh Stations (Pre -Pass)

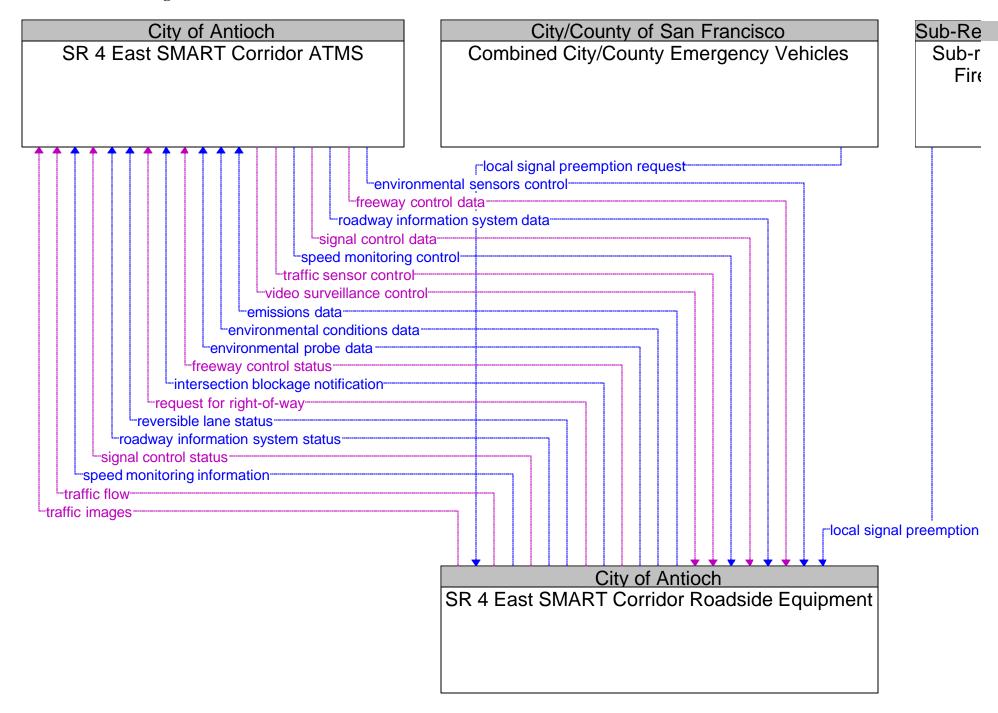


Stakeholder: City of Antioch

Architecture Element: SR 4 East SMART Corridor Roadside Equipment

**Interconnect Diagram** 

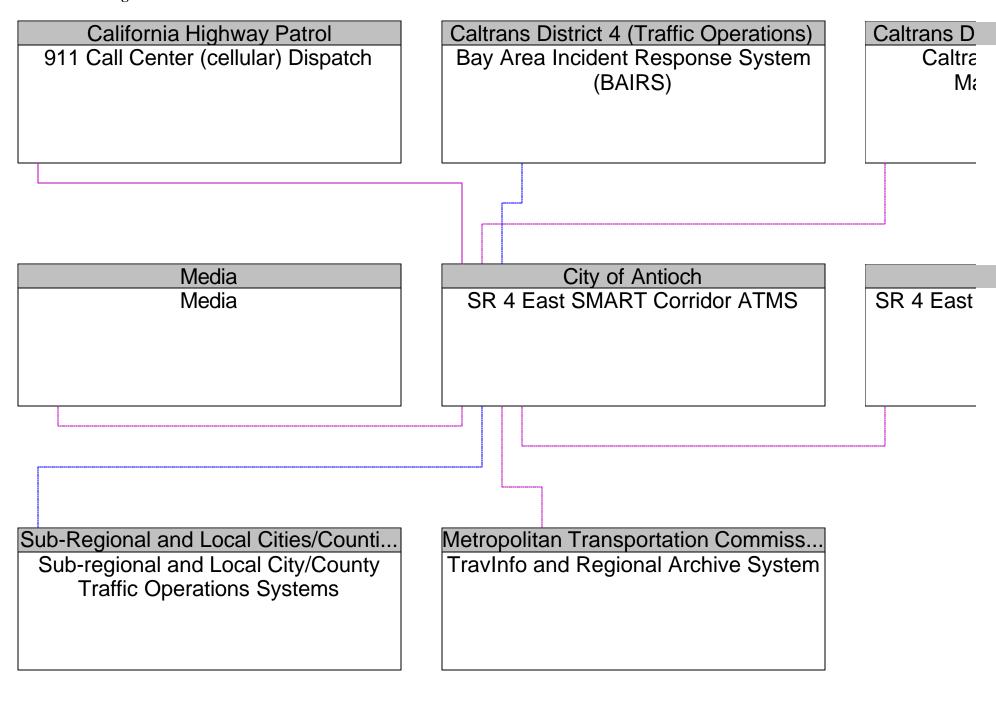


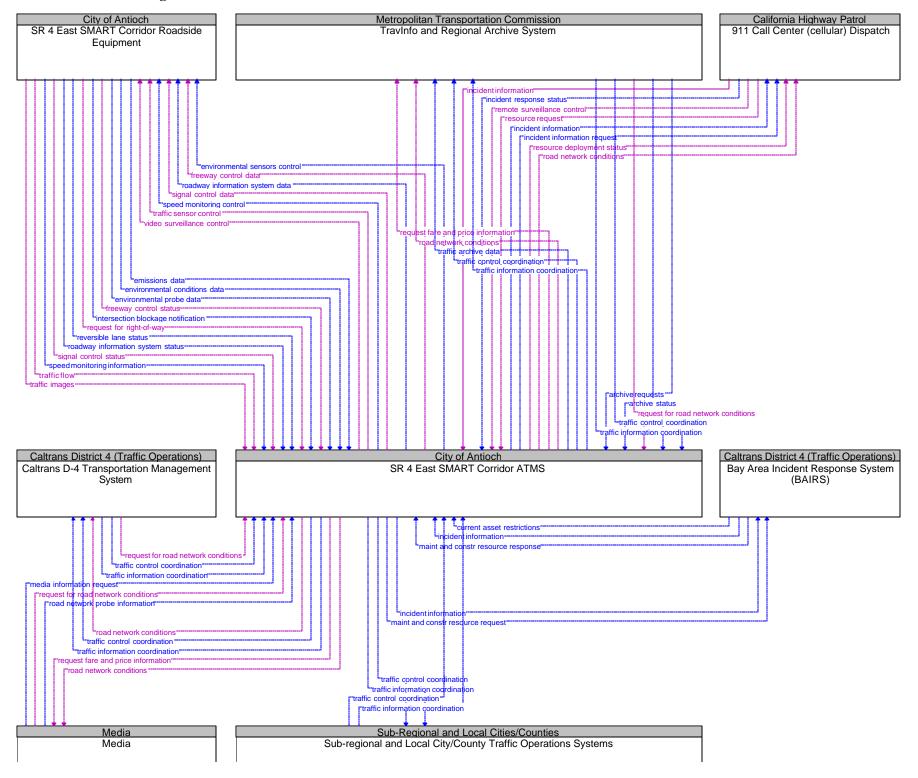


Existing
Planned

Existing Planned

**Interconnect Diagram** 



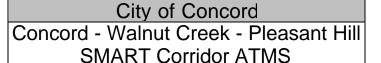


Stakeholder: City of Concord

Architecture Element: Concord - Walnut Creek - Pleasant Hill SMART Corridor

Roadside Equipment

**Interconnect Diagram** 

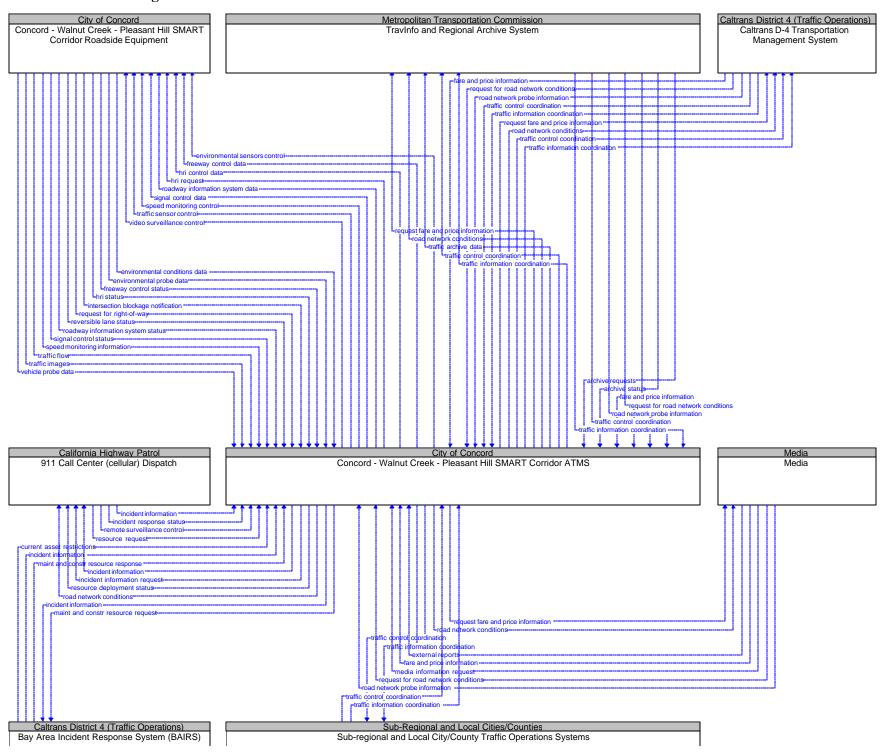


Sub-Regional and Local Cities/Counti...
Sub-regional and Local City/County
Fire Dept Emergency Vehicles

City of Concord
Concord - Walnut Creek - Pleasant Hill
SMART Corridor Roadside Equipment

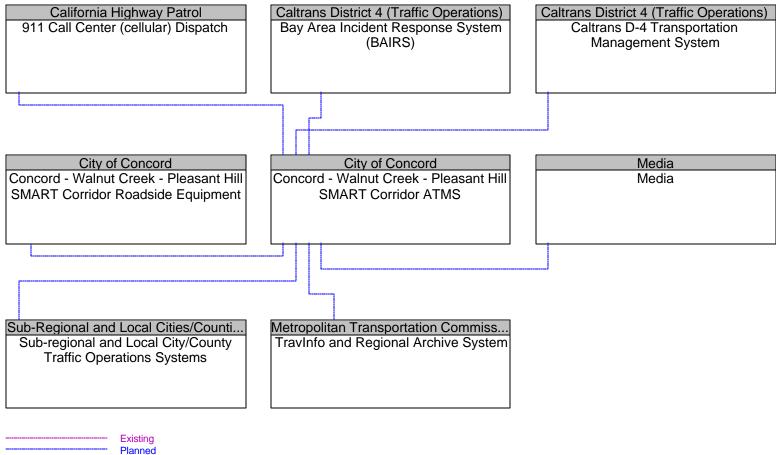
Existing
Planned

Architecture Element: Concord - Walnut Creek - Pleasant Hill SMART Corridor Roadside Equipment

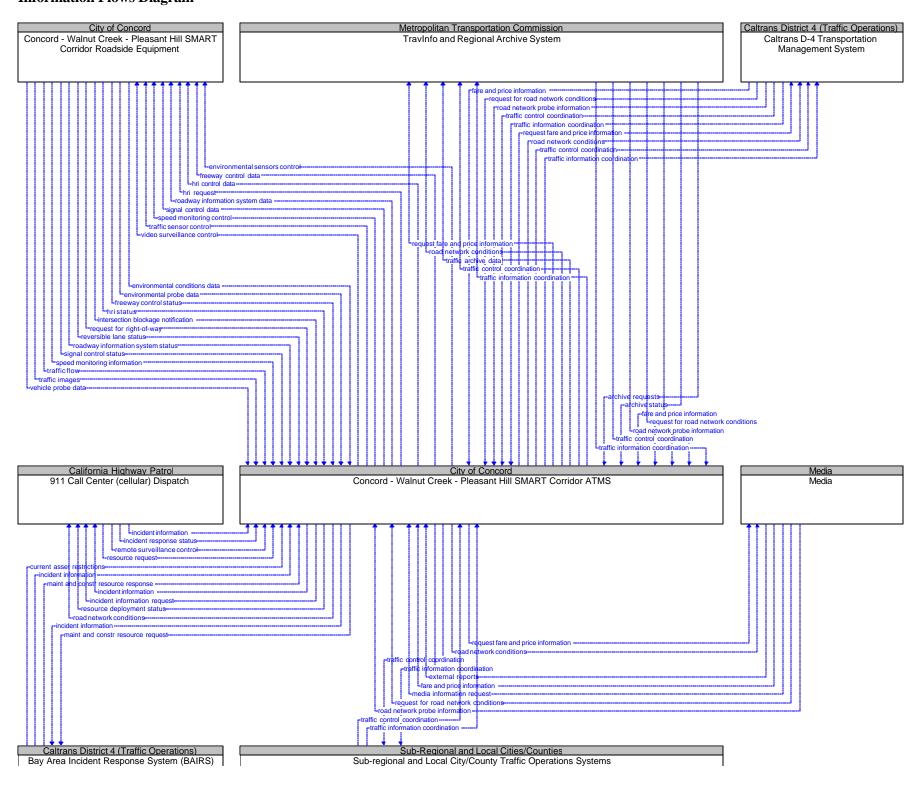


Stakeholder: City of Concord
Architecture Element: Concord - Walnut Creek - Pleasant Hill SMART Corridor ATMS
Interconnect Diagram

California Highway Patrol
Caltrans District 4 (Traffic Operations)
Caltrans



## Architecture Element: Concord - Walnut Creek - Pleasant Hill SMART Corridor ATMS Information Flows Diagram



Stakeholder: City of Fairfield

Architecture Element: Suisun - Fairfield - Vacaville SMART Corridor Roadside

**Equipment** 

**Interconnect Diagram** 

Sub-Regional and Local Cities/Counti...
Sub-regional and Local City/County
Fire Dept Emergency Vehicles

City of Fairfield
Suisun - Fairfield - Vacaville SMART
Corridor ATMS

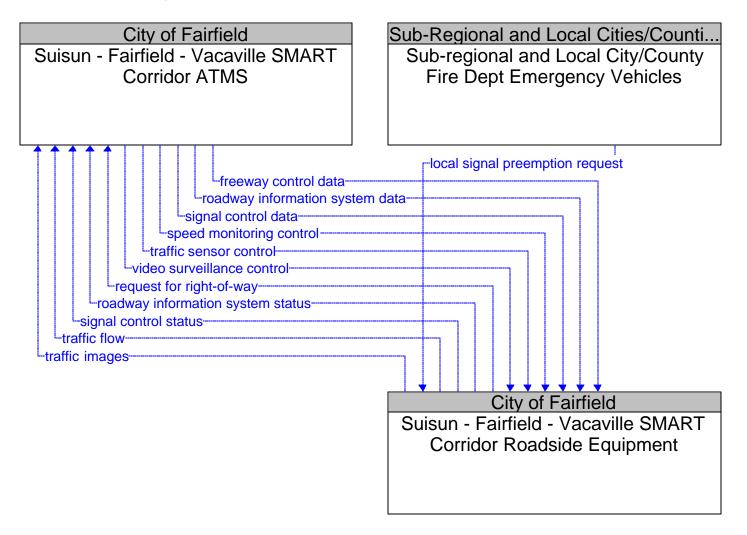
City of Fairfield
Suisun - Fairfield - Vacaville SMART
Corridor Roadside Equipment

Existing
Planned

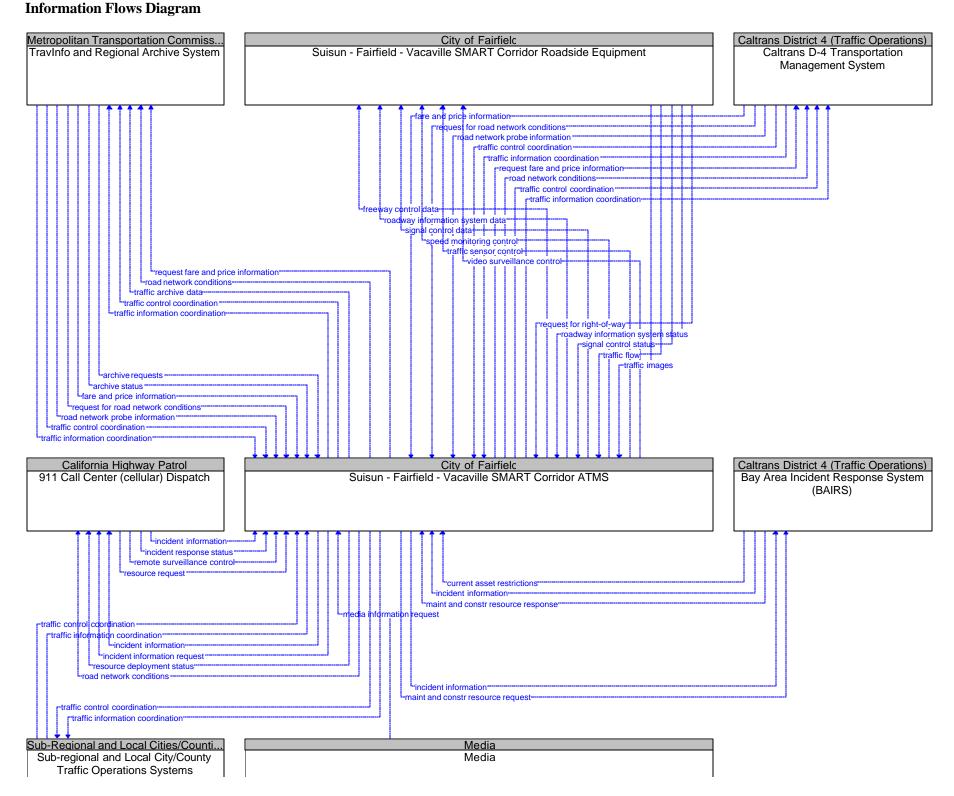
Stakeholder: City of Fairfield

Architecture Element: Suisun - Fairfield - Vacaville SMART Corridor Roadside

**Equipment** 



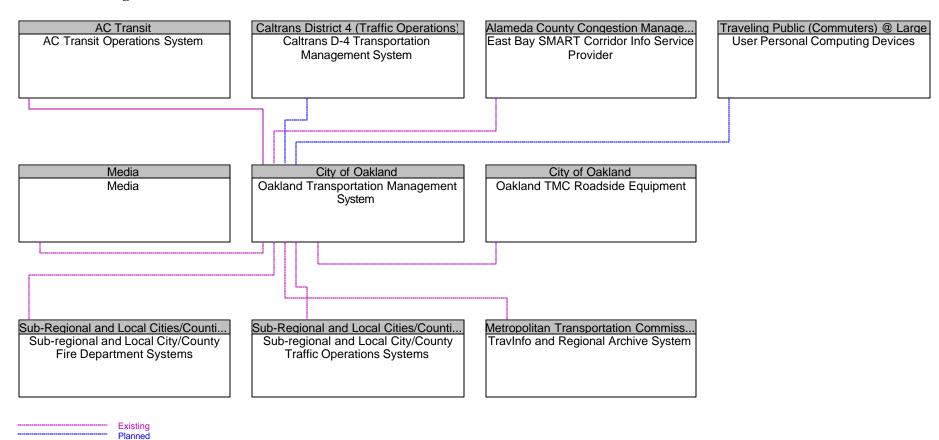
Stakeholder: City of Fairfield Architecture Element: Suisun - Fairfield - Vacaville SMART Corridor ATMS **Interconnect Diagram** California Highway Patrol Caltrans District 4 (Traffic Operations) Caltrans District 4 (Traffic Operations) Caltrans D-4 Transportation 911 Call Center (cellular) Dispatch Bay Area Incident Response System Management System (BAIRS) City of Fairfield Sub-Regional and Local Cities/Counti... Media Suisun - Fairfield - Vacaville SMART Sub-regional and Local City/County Media Traffic Operations Systems Corridor ATMS City of Fairfield Metropolitan Transportation Commiss... Suisun - Fairfield - Vacaville SMART TravInfo and Regional Archive System Corridor Roadside Equipment **Planned** 

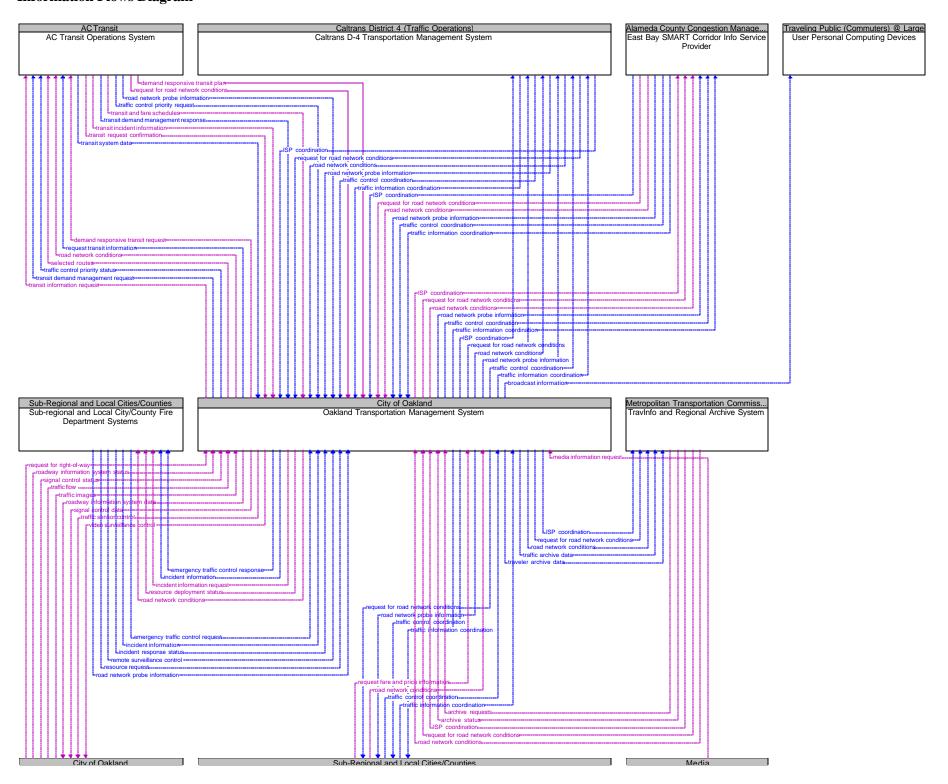


Stakeholder: City of Oakland

Architecture Element: Oakland Transportation Management System

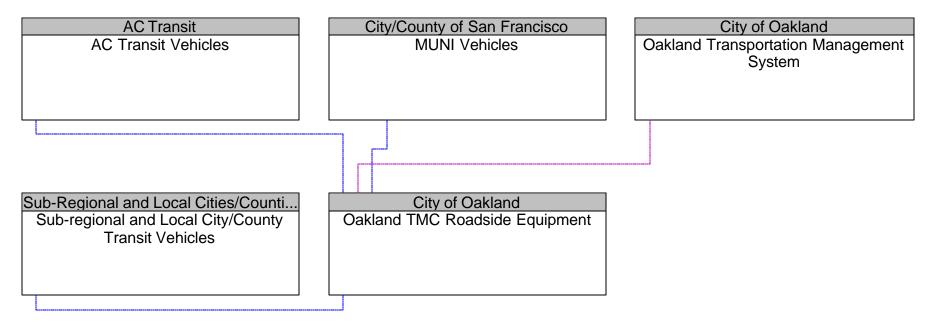
**Interconnect Diagram** 





Stakeholder: City of Oakland
Architecture Element: Oakland TMC Roadside Equipment

**Interconnect Diagram** 

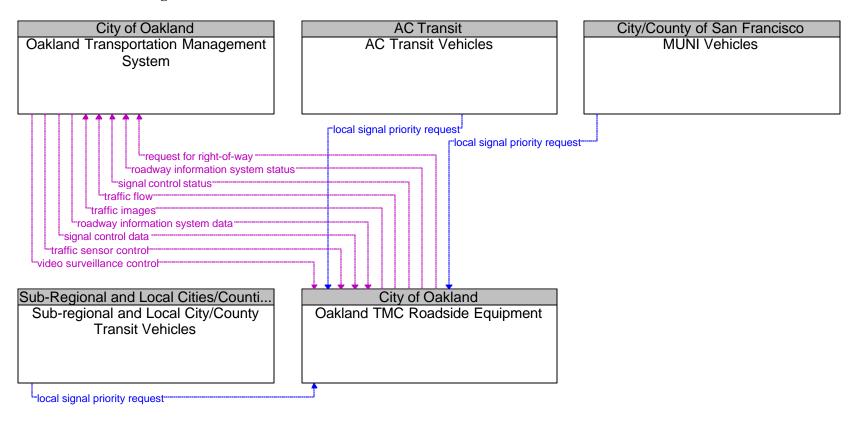


Existing Planned

Stakeholder: City of Oakland

Architecture Element: Oakland TMC Roadside Equipment

**Information Flows Diagram** 

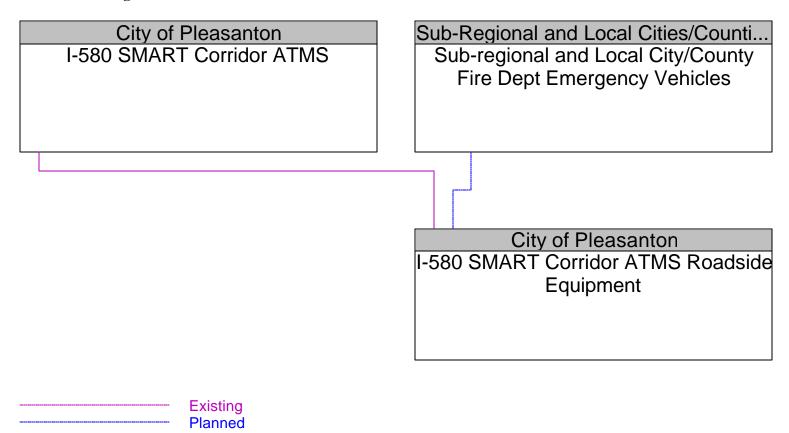


Existing Planned

Stakeholder: City of Pleasanton

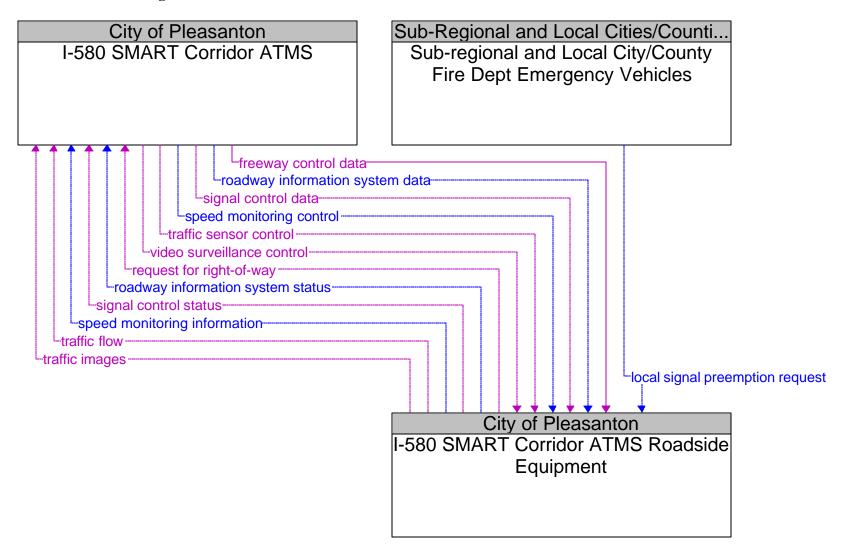
Architecture Element: I-580 SMART Corridor ATMS Roadside Equipment

**Interconnect Diagram** 

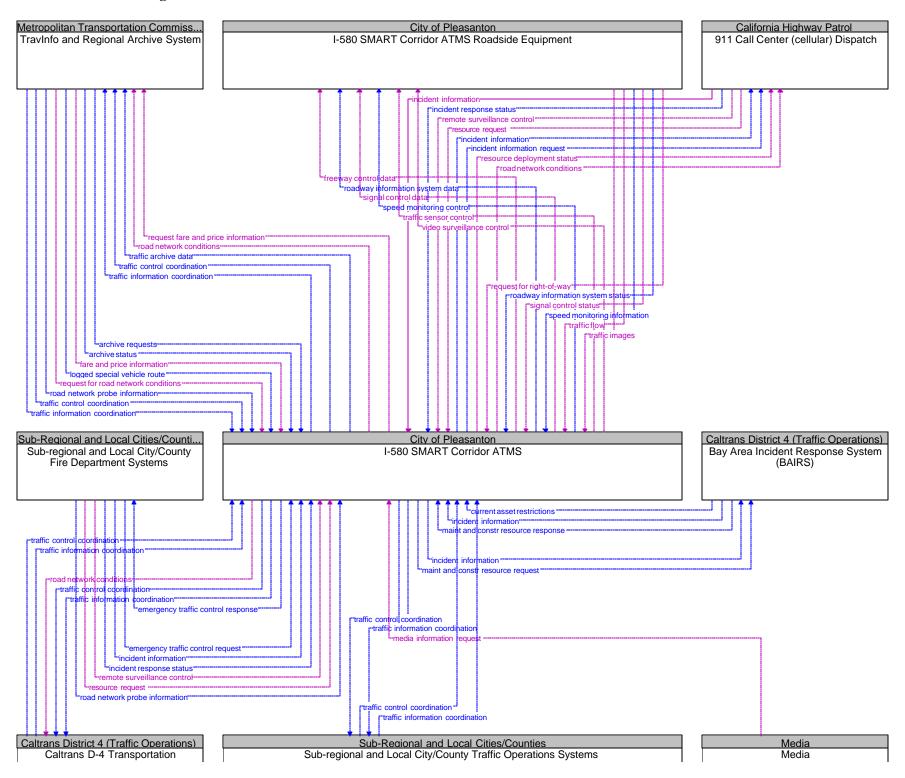


Stakeholder: City of Pleasanton

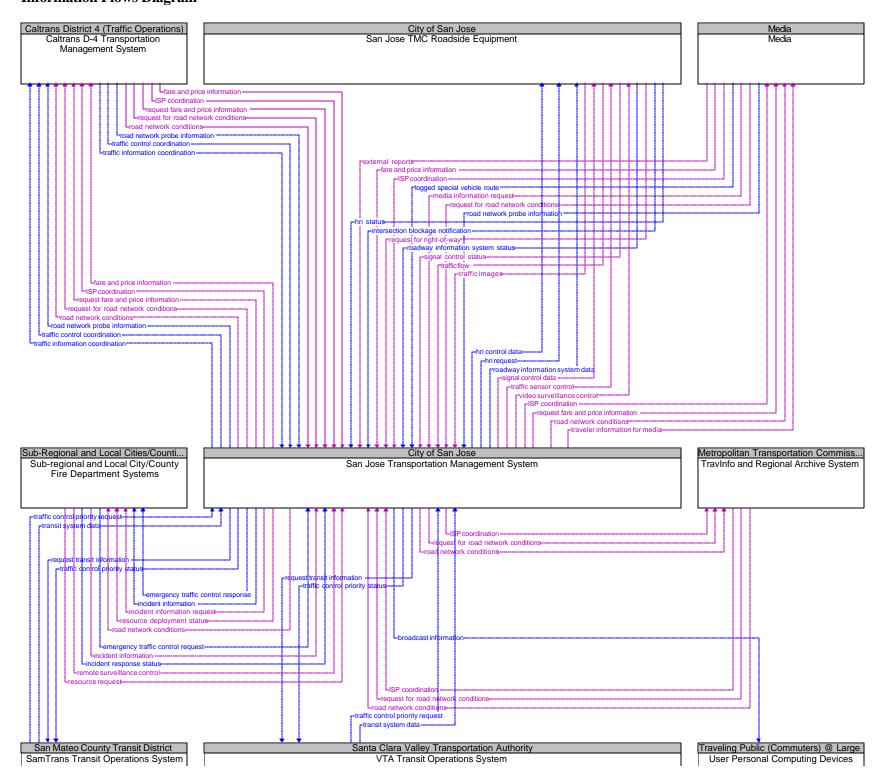
Architecture Element: I-580 SMART Corridor ATMS Roadside Equipment



Stakeholder: City of Pleasanton Architecture Element: I-580 SMART Corridor ATMS **Interconnect Diagram** California Highway Patrol Caltrans District 4 (Traffic Operations) Caltrans District 4 (Traffic Operations) 911 Call Center (cellular) Dispatch Bay Area Incident Response System Caltrans D-4 Transportation Management System (BAIRS) City of Pleasanton City of Pleasanton Media I-580 SMART Corridor ATMS Roadside I-580 SMART Corridor ATMS Media Equipment Sub-Regional and Local Cities/Counti... Sub-Regional and Local Cities/Counti... Metropolitan Transportation Commiss... Sub-regional and Local City/County Sub-regional and Local City/County TravInfo and Regional Archive System Fire Department Systems Traffic Operations Systems **Planned** 



Stakeholder: City of San Jose Architecture Element: San Jose Transportation Management System **Interconnect Diagram** San Mateo County Transit District Caltrans District 4 (Traffic Operations) Media Caltrans D-4 Transportation SamTrans Transit Operations System Media Management System City of San Jose City of San Jose Sub-Regional and Local Cities/Counti... San Jose TMC Roadside Equipment San Jose Transportation Management Sub-regional and Local City/County System Fire Department Systems Metropolitan Transportation Commiss... Traveling Public (Commuters) @ Large Santa Clara Valley Transportation Au... VTA Transit Operations System TravInfo and Regional Archive System **User Personal Computing Devices Planned** 

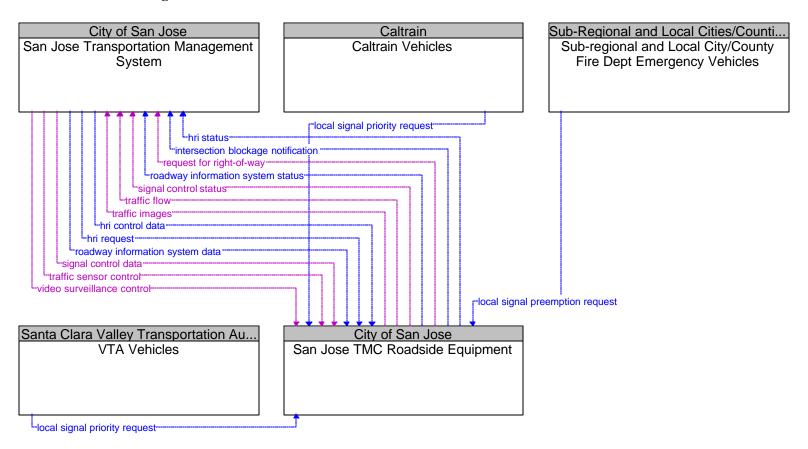


Stakeholder: City of San Jose Architecture Element: San Jose TMC Roadside Equipment **Interconnect Diagram** Caltrain City of San Jose Sub-Regional and Local Cities/Counti... Caltrain Vehicles San Jose Transportation Management Sub-regional and Local City/County System Fire Dept Emergency Vehicles Santa Clara Valley Transportation Au... City of San Jose VTA Vehicles San Jose TMC Roadside Equipment

Planned

Stakeholder: City of San Jose

Architecture Element: San Jose TMC Roadside Equipment

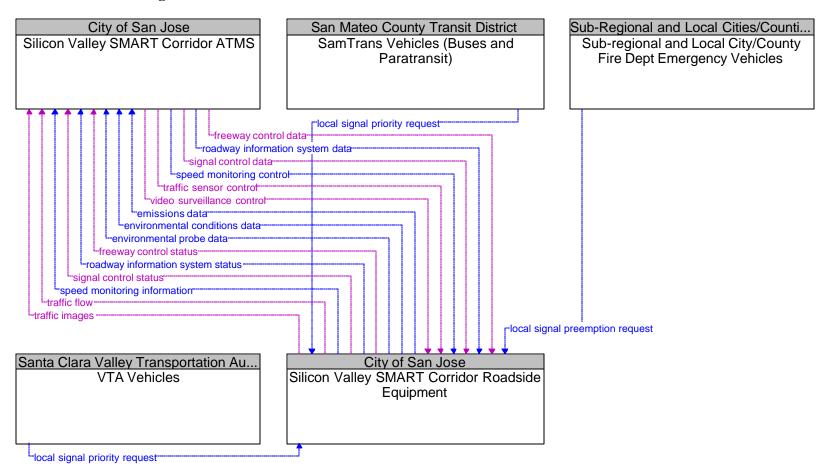


Stakeholder: City of San Jose Architecture Element: Silicon Valley SMART Corridor Roadside Equipment **Interconnect Diagram** San Mateo County Transit District City of San Jose Sub-Regional and Local Cities/Counti... Sub-regional and Local City/County SamTrans Vehicles (Buses and Silicon Valley SMART Corridor ATMS Paratransit) Fire Dept Emergency Vehicles Santa Clara Valley Transportation Au...
VTA Vehicles City of San Jose Silicon Valley SMART Corridor Roadside Equipment

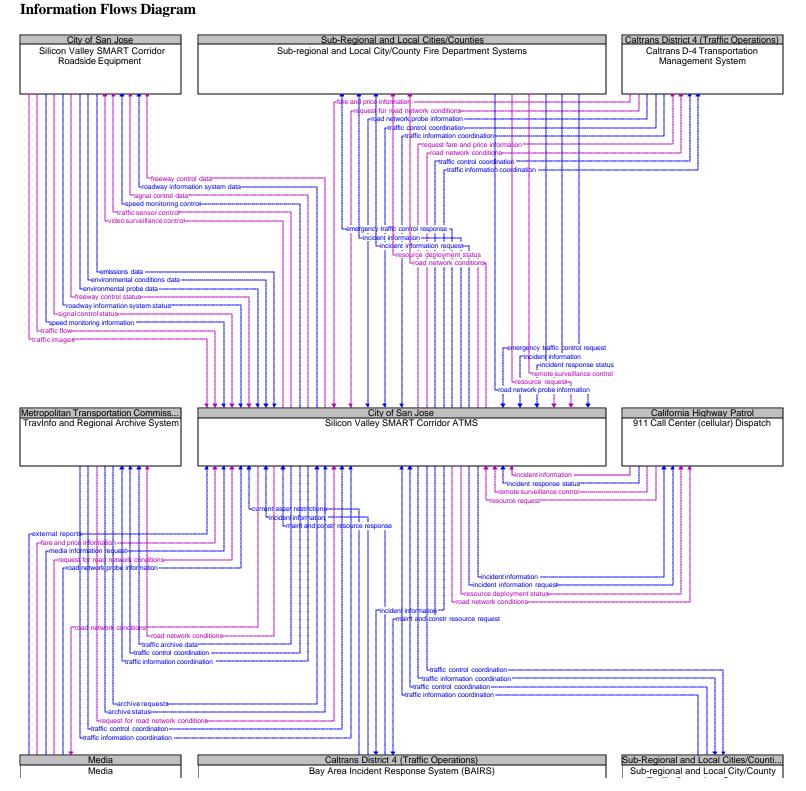
Existing Planned

Stakeholder: City of San Jose

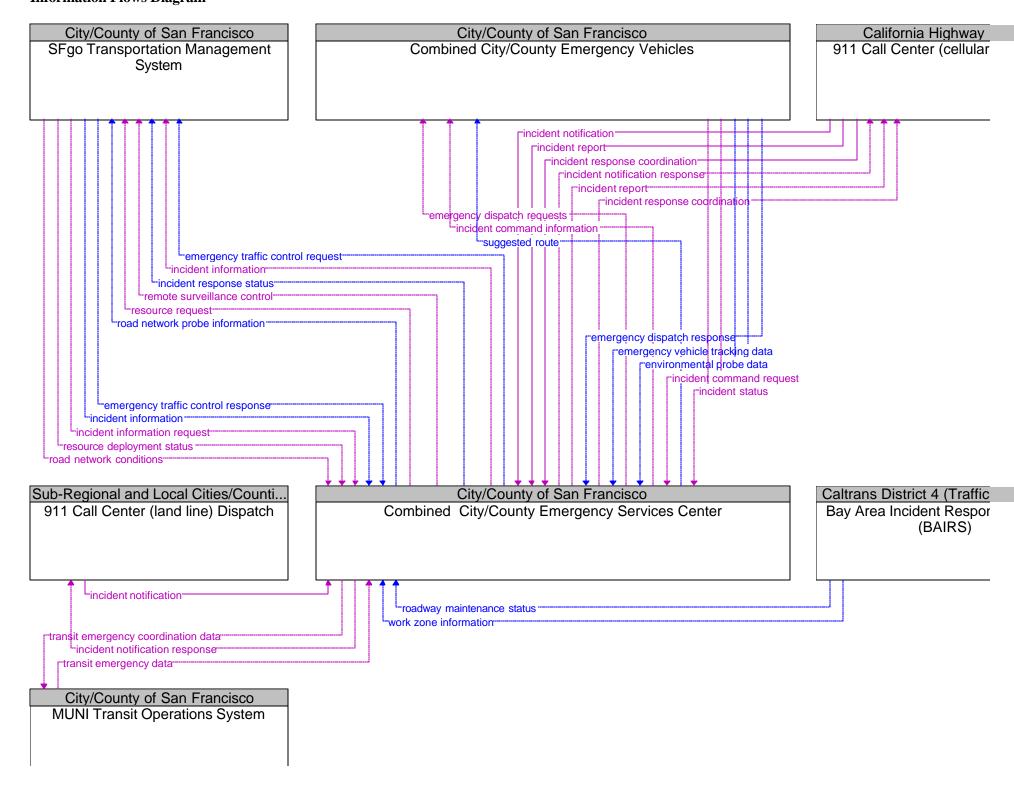
Architecture Element: Silicon Valley SMART Corridor Roadside Equipment



Stakeholder: City of San Jose Architecture Element: **Silicon Valley SMART Corridor ATMS Interconnect Diagram** California Highway Patrol Caltrans District 4 (Traffic Operations) Caltrans District 4 (Traffic Operations) 911 Call Center (cellular) Dispatch Bay Area Incident Response System Caltrans D-4 Transportation (BAIRS) Management System Media City of San Jose City of San Jose Media Silicon Valley SMART Corridor ATMS Silicon Valley SMART Corridor Roadside Equipment Sub-Regional and Local Cities/Counti... Sub-Regional and Local Cities/Counti... Metropolitan Transportation Commiss... Sub-regional and Local City/County Sub-regional and Local City/County TravInfo and Regional Archive System Traffic Operations Systems Fire Department Systems Existing



Stakeholder: City/County of San Francisco Architecture Element: **Combined City/County Emergency Services Center Interconnect Diagram** California Highway Patrol Sub-Regional and Local Cities/Counti... Caltrans District 4 (Traffic Operations) 911 Call Center (land line) Dispatch 911 Call Center (cellular) Dispatch Bay Area Incident Response System (BAIRS) City/County of San Francisco City/County of San Francisco City/County of San Francisco Combined City/County Emergency Combined City/County Emergency MUNI Transit Operations System Services Center **Vehicles** City/County of San Francisco SFgo Transportation Management System



Stakeholder: City/County of San Francisco
Architecture Element: Combined City/County Emergency Vehicles
Interconnect Diagram

City/County of San Francisco
Combined City/County Emergency
Services Center

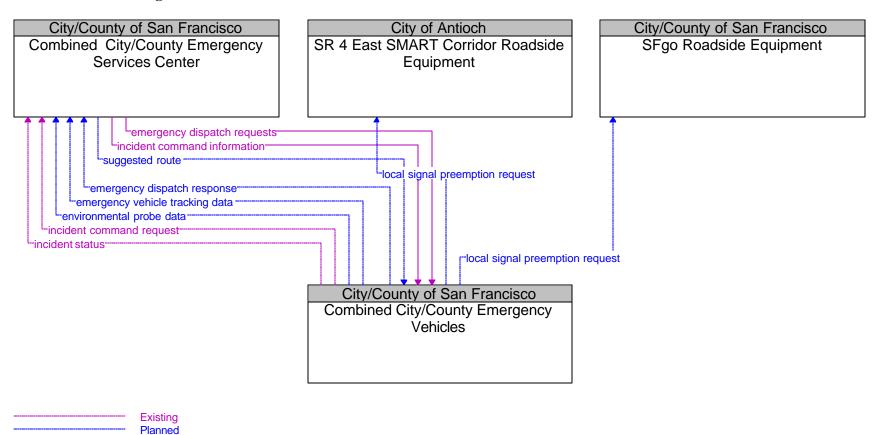
City/County of San Francisco
SFgo Roadside Equipment
SR 4 East SMART Corridor Roadside Equipment

City/County of San Francisco
City/County of San Francisco
City/County of San Francisco
Combined City/County Emergency
Vehicles

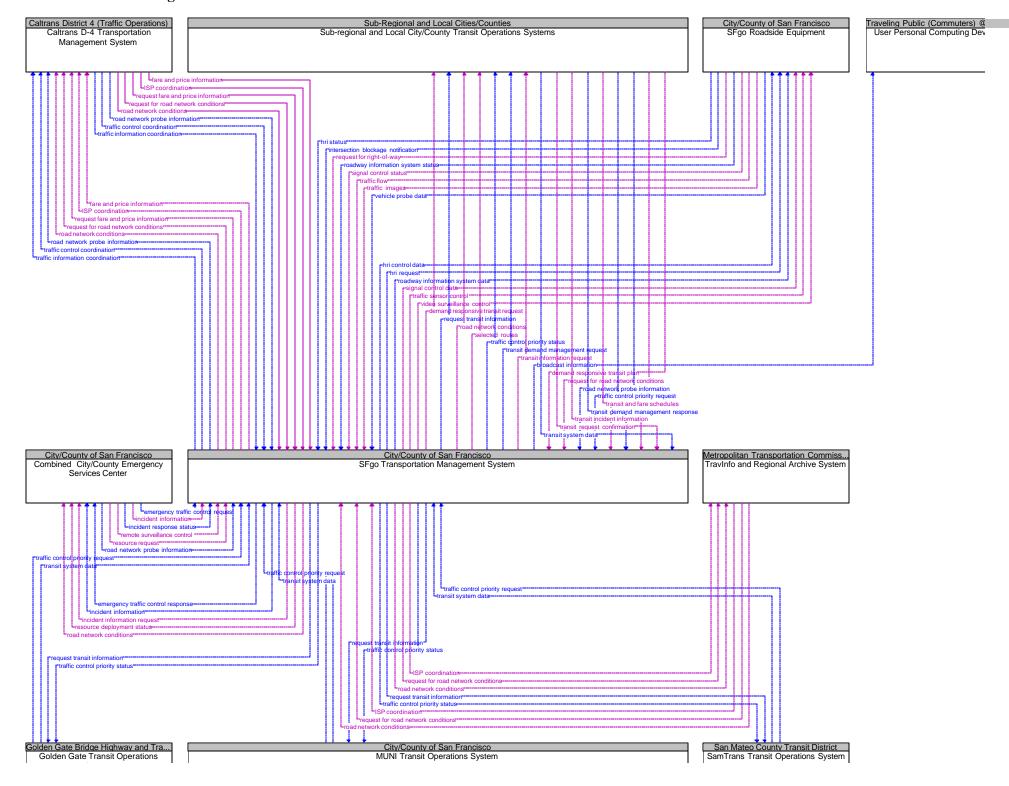
Existing
Planned

Stakeholder: City/County of San Francisco

Architecture Element: Combined City/County Emergency Vehicles



Stakeholder: City/County of San Francisco SFgo Roadside Equipment Architecture Element: **Interconne ct Diagram** City/County of San Francisco City/County of San Francisco San Mateo County Transit District Combined City/County Emergency MUNI Vehicles SamTrans Vehicles (Buses and **Vehicles** Paratransit) City/County of San Francisco City/County of San Francisco Sub-Regional and Local Cities/Counti... SFgo Roadside Equipment Sub-regional and Local City/County SFgo Transportation Management Fire Dept Emergency Vehicles System



Stakeholder: City/County of San Francisco Architecture Element: **SFgo Transportation Management System Interconnect Diagram** City/County of San Francisco
Combined City/County Emergency Caltrans District 4 (Traffic Operations) Golden Gate Bridge Highway and Tra... Traveling Public (Commuters) @ Large Caltrans D-4 Transportation Golden Gate Transit Operations User Personal Computing Devices Management System Services Center System City/County of San Francisco City/County of San Francisco San Mateo County Transit District MUNI Transit Operations System SFgo Transportation Management SamTrans Transit Operations System System

Sub-Regional and Local Cities/Counti...

Sub-regional and Local City/County

Transit Operations Systems

Metropolitan Transportation Commiss...

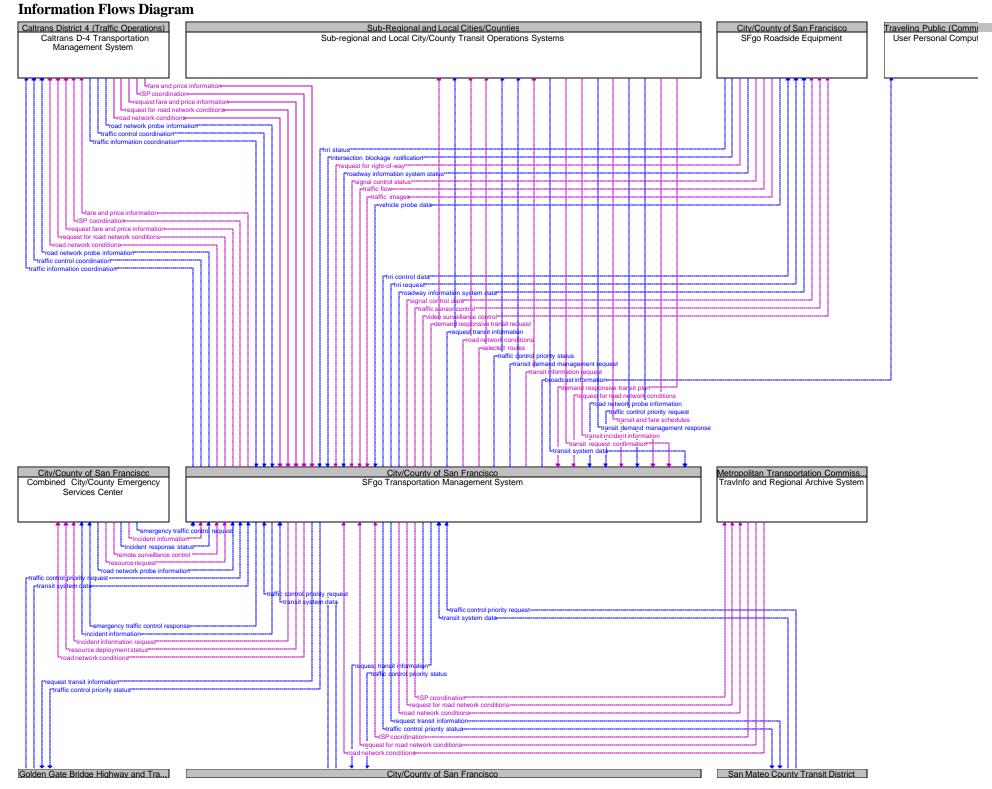
TravInfo and Regional Archive System

Existin

City/County of San Francisco

SFgo Roadside Equipment

## Architecture Element: SFgo Transportation Management System



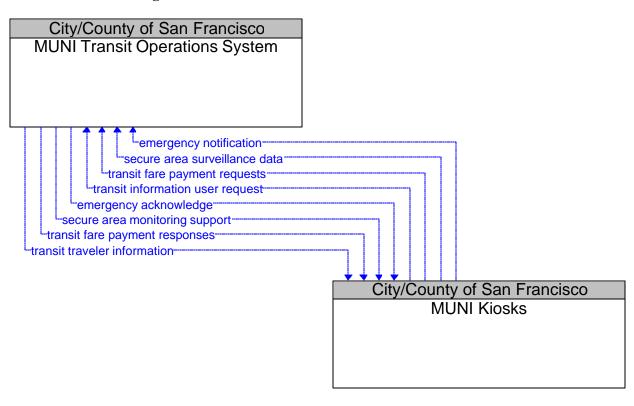
Stakeholder:	City/County of San Fra	ncisco	
Architecture Element:	MUNI Kiosks		
<b>Interconnect Diagram</b>			
City/County of	San Francisco		
	perations System		
morn maner of	goranorio <b>G</b> yororii		
			City/County of San Francisco
			MUNI Kiosks
			WOT WITHOUT
	Eviatina		
	Existing Planned		
Г	iaiiiicu		

Stakeholder: City/County of San Francisco

Existing Planned

Architecture Element: MUNI Kiosks

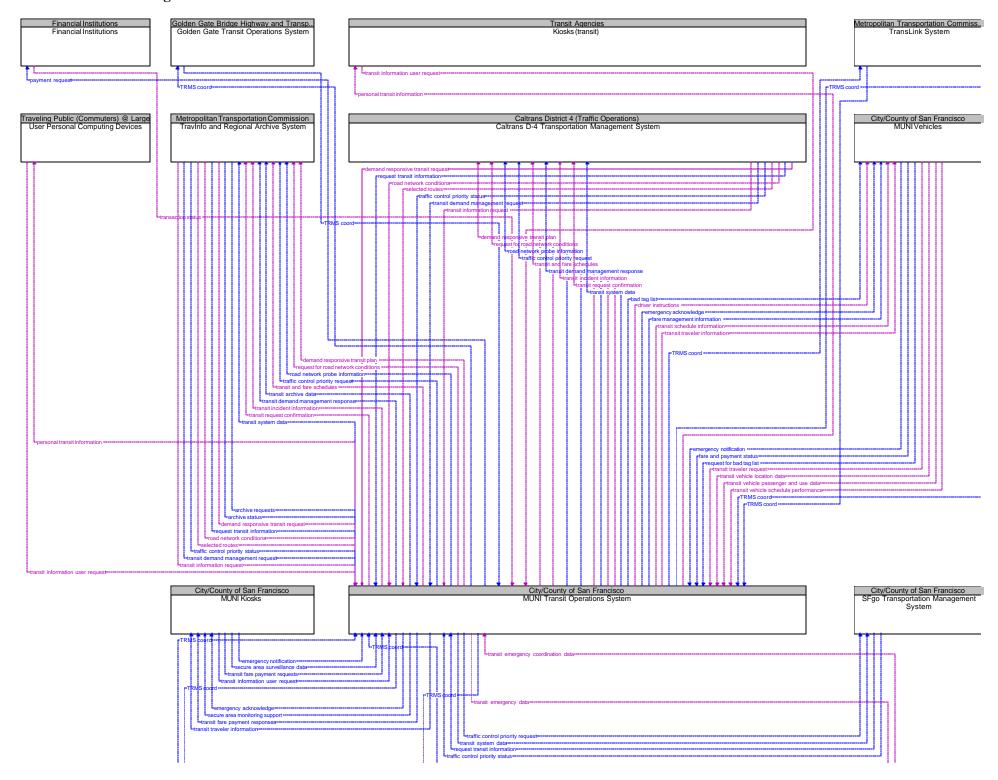
**Information Flows Diagram** 



86

Architecture Element: MUNI Transit Operations System

**Interconnect Diagram** City/County of San Francisco City/County of San Francisco San Mateo County Transit District Metropo SFgo Transportation Management MUNI Vehicles SamTrans Transit Operations System System Traveling Public (Commuters) @ Large Bay Area Rapid Transit District Caltrain Caltrar User Personal Computing Devices BART Transit/Rail Operations System Caltrain Rail Operations System City/County of San Francisco City/County of San Francisco Combined City/County Emergency MUNI Transit Operations System Services Center Golden Gate Bridge Highway and Tra... Transit Agencies Cit Golden Gate Transit Operations Kiosks (transit) System

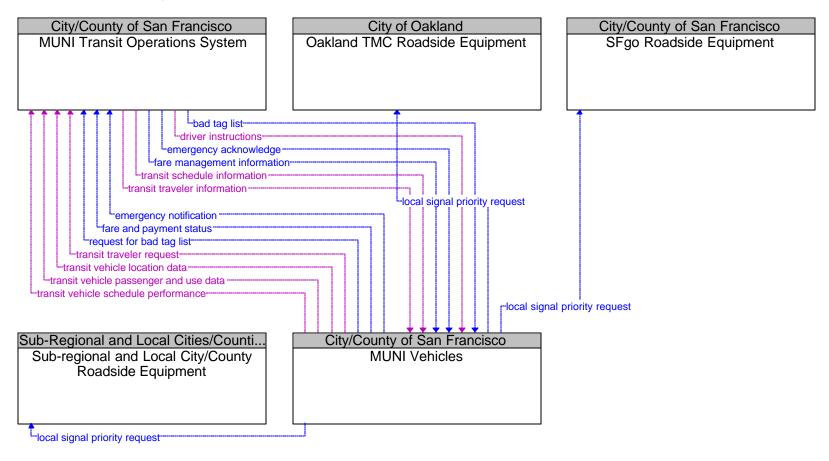


Stakeholder: City/County of San Francisco **MUNI Vehicles** Architecture Element: **Interconnect Diagram** City/County of San Francisco City of Oakland City/County of San Francisco MUNI Transit Operations System Oakland TMC Roadside Equipment SFgo Roadside Equipment Sub-Regional and Local Cities/Counti... City/County of San Francisco Sub-regional and Local City/County MUNI Vehicles Roadside Equipment

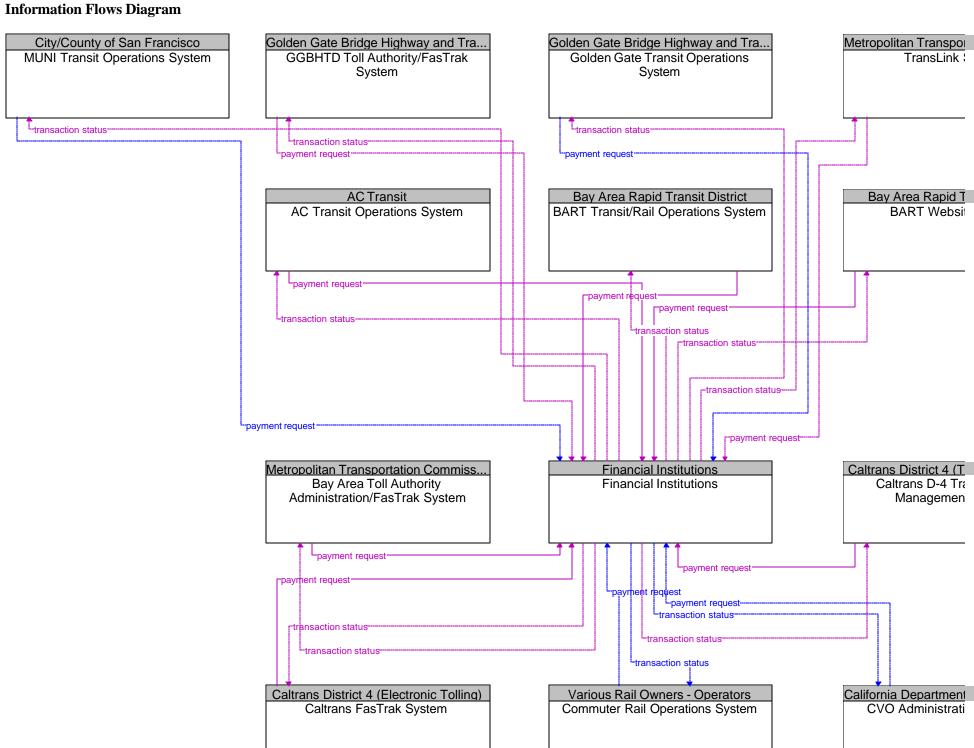
Existing Planned

Stakeholder: City/County of San Francisco

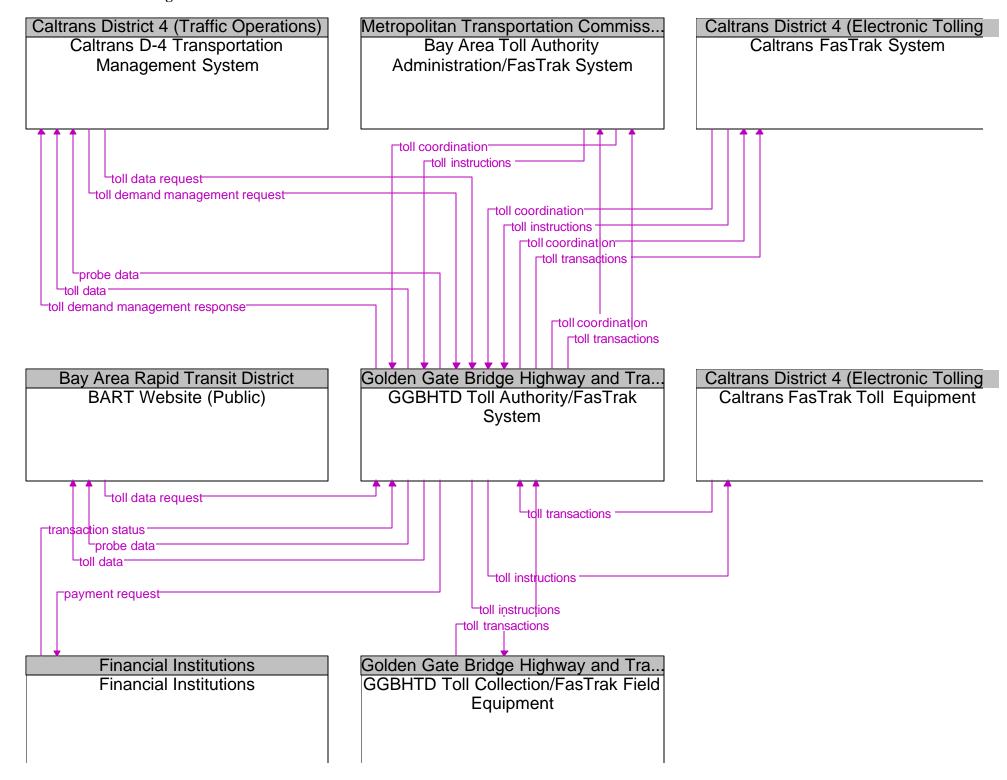
Architecture Element: MUNI Vehicles



Stakeholder: **Financial Institutions** Architecture Element: **Financial Institutions Interconnect Diagram** Golden Gate Bridge Highway and Tra... Golden Gate Bridge Highway and Tra... City/County of San Francisco Metropolitan Transportation Commiss... GGBHTD Toll Authority/FasTrak Golden Gate Transit Operations MUNI Transit Operations System TransLink System System System AC Transit Bay Area Rapid Transit District Bay Area Rapid Transit District AC Transit Operations System BART Transit/Rail Operations System BART Website (Public) Metropolitan Transportation Commiss... Financial Institutions Caltrans District 4 (Traffic Operations) Bay Area Toll Authority Financial Institutions Caltrans D-4 Transportation Administration/FasTrak System Management System Caltrans District 4 (Electronic Tolling) California Department of Motor Vehicl... Various Rail Owners - Operators Caltrans FasTrak System Commuter Rail Operations System CVO Administration (Pre-Pass)



Stakeholder: Golden Gate Bridge Highway and Transportation District Architecture Element: **GGBHTD Toll Authority/FasTrak System Interconnect Diagram** Bay Area Rapid Transit District Metropolitan Transportation Commiss... Caltrans District 4 (Traffic Operations) BART Website (Public) Bay Area Toll Authority Caltrans D-4 Transportation Administration/FasTrak System Management System Caltrans District 4 (Electronic Tolling) Golden Gate Bridge Highway and Tra... Caltrans District 4 (Electronic Tolling) Caltrans FasTrak System GGBHTD Toll Authority/FasTrak Caltrans FasTrak Toll Equipment System Financial Institutions Golden Gate Bridge Highway and Tra... GGBHTD Toll Collection/FasTrak Field Financial Institutions Equipment

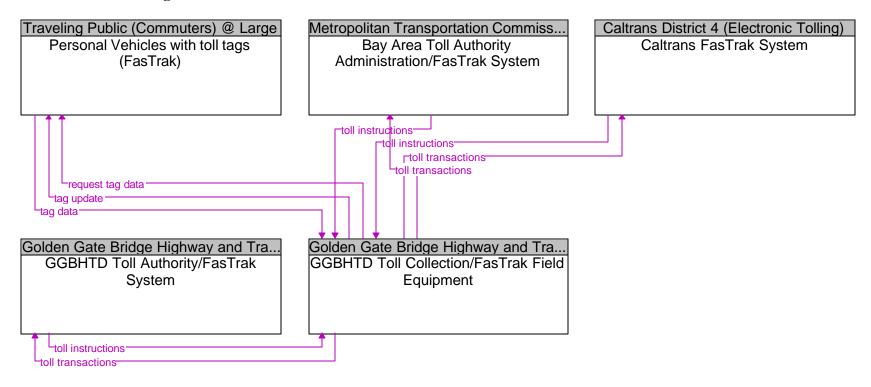


Stakeholder: Golden Gate Bridge Highway and Transportation District Architecture Element: **GGBHTD Toll Collection/FasTrak Field Equipment Interconnect Diagram** Metropolitan Transportation Commiss... Caltrans District 4 (Electronic Tolling) Golden Gate Bridge Highway and Tra... GGBHTD Toll Authority/FasTrak Bay Area Toll Authority Caltrans FasTrak System Administration/FasTrak System System Golden Gate Bridge Highway and Tra... Traveling Public (Commuters) @ Large Personal Vehicles with toll tags GGBHTD Toll Collection/FasTrak Field (FasTrak) Equipment

Existing

Stakeholder: Golden Gate Bridge Highway and Transportation District
Architecture Element: GGBHTD Toll Collection/FasTrak Field Equipment

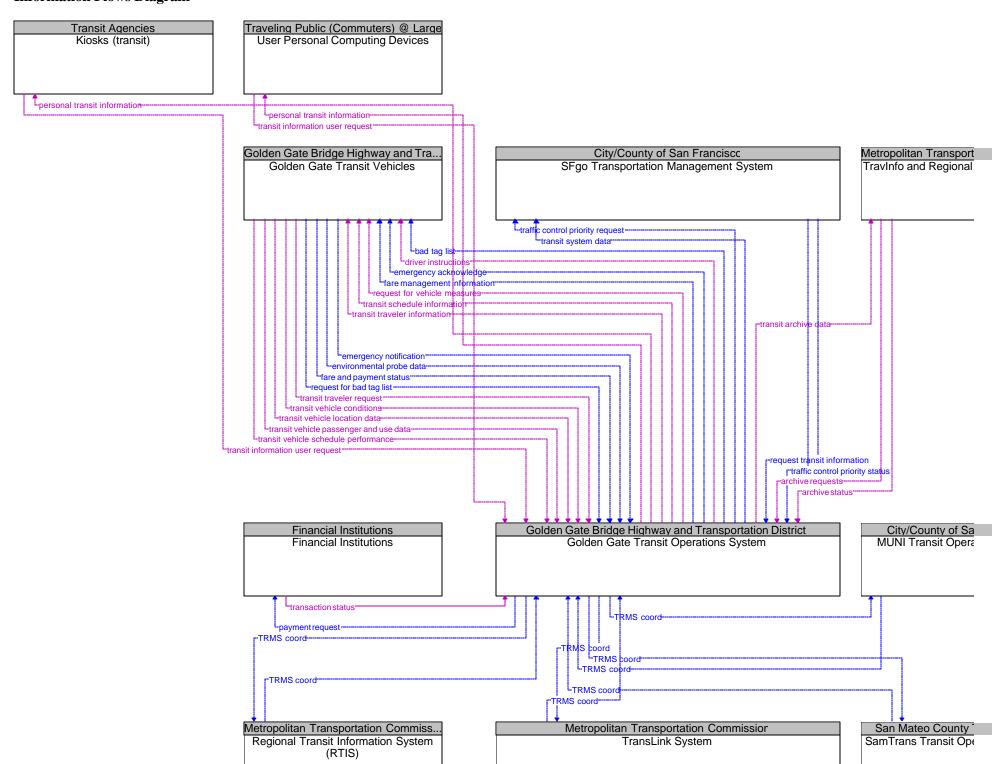
**Information Flows Diagram** 



Existing Planned

**Golden Gate Transit Operations System** Architecture Element: **Interconnect Diagram** Metropolitan Transportation Commiss...
TravInfo and Regional Archive System Traveling Public (Commuters) @ Large User Personal Computing Devices Financial Institutions Golden Gate Bridge Highway and T Golden Gate Transit Vehicles **Financial Institutions** City/County of San Francisco Golden Gate Bridge Highway and T MUNI Transit Operations System Golden Gate Transit Operations System San Mateo County Transit District City/County of San Francisco SamTrans Transit Operations System SFgo Transportation Manageme System

# Architecture Element: Golden Gate Transit Operations System Information Flows Diagram



Stakeholder:	Golden Gate Bridge Highway and Transportation District			
Architecture Element:	Golden Gate Transit Vehicles			
<b>Interconnect Diagram</b>				
J				
Golden Gate Bridge	e Highway and Tra			
	ransit Vehicles			
		Golden Gate Bridge Highway and Tra		
		Golden Gate Transit Operations		
		System		
		·		
E	Existing			
	Planned			

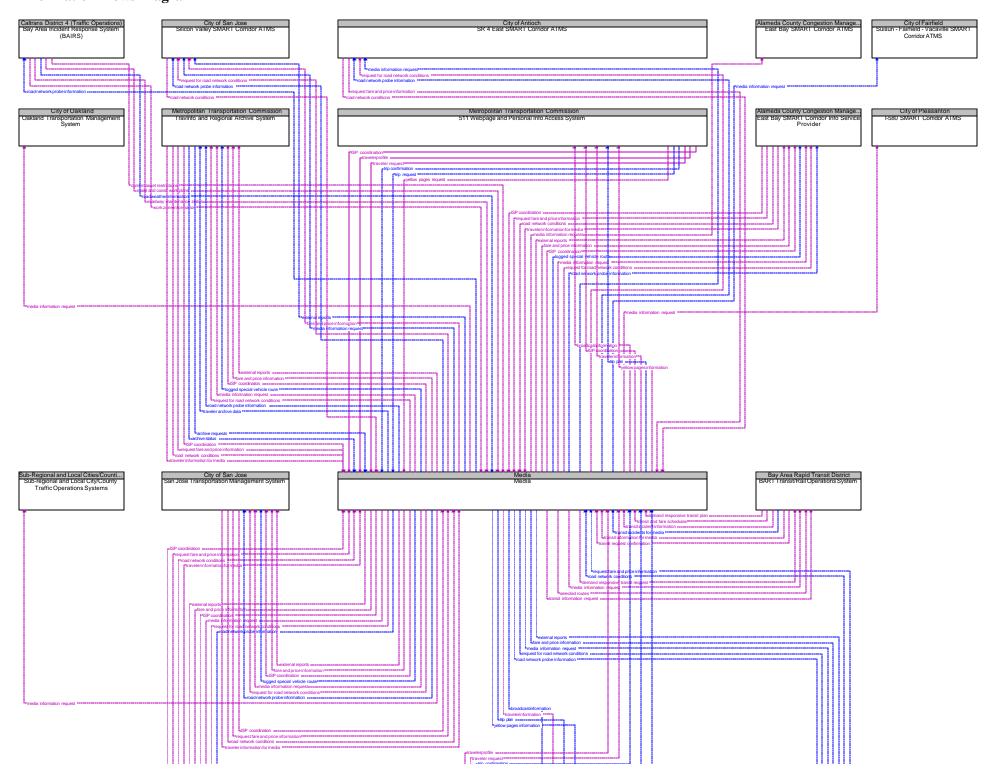
Golden Gate Bridge Highway and Tra...
Golden Gate Transit Operations
System

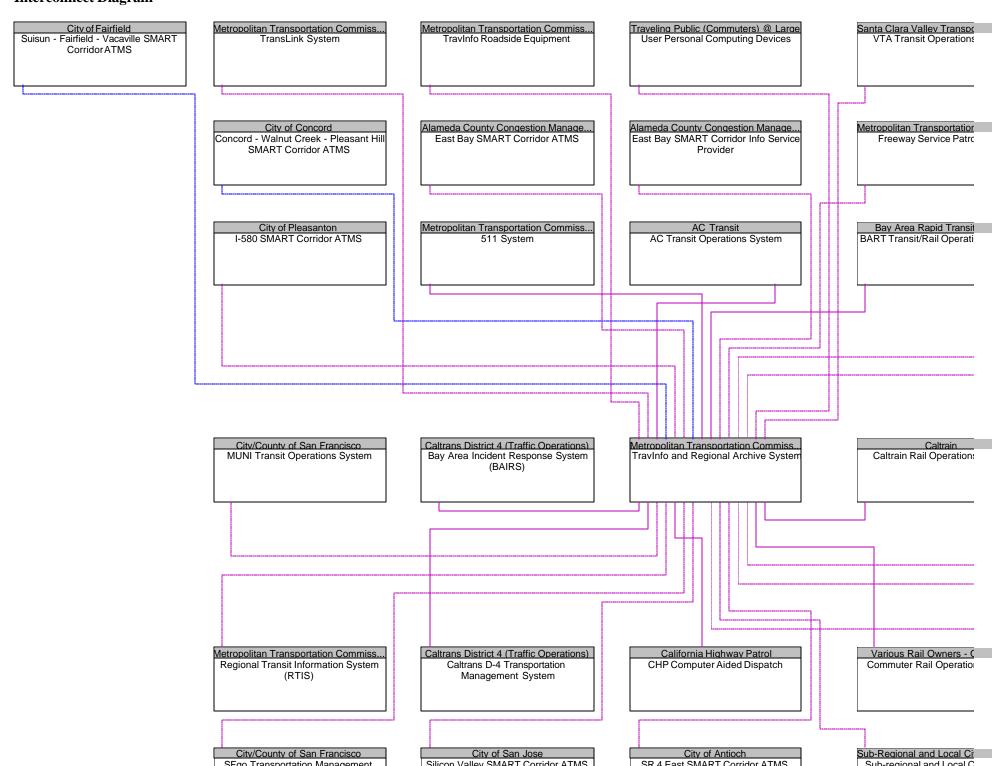
Stakeholder: Golden Gate Bridge Highway and Transportation District Architecture Element: **Golden Gate Transit Vehicles Information Flows Diagram** Golden Gate Bridge Highway and Tra... Golden Gate Transit Vehicles -bad tag listdriver instructions emergency acknowledge fare management informationrequest for vehicle measures transit schedule informationtransit traveler informationemergency notification environmental probe data fare and payment status-Lrequest for bad tag list transit traveler request transit vehicle conditions transit vehicle location data

Existing Planned

transit vehicle passenger and use datatransit vehicle schedule performance

Architecture Element: Media **Interconnect Diagram** City of Oakland City of San Jose City of San Jose City of Oakland Transportation Management San Jose Transportation Management Silicon Valley SMART Corridor ATMS SR 4 East SMAF System . System Metropolitan Transportation Commiss... Bay Area Rapid Transit District Caltrans District 4 City of Fairfield Suisun - Fairfield - Vacaville SMART 511 Webpage and Personal Info BART Transit/Rail Operations System Bay Area Incident Access System Corridor ATMS (BA Traveling Public (Commuters) @ Large Caltrans District 4 (Traffic Operations) Media City of User Personal Computing Devices Caltrans D-4 Transportation Media Concord - Walnut ( Management System SMART Cc Alameda County Congestion Manage... Alameda County Congestion Manage... City of P East Bay SMART Corridor ATMS East Bay SMART Corridor Info Service I-580 SMART Provider

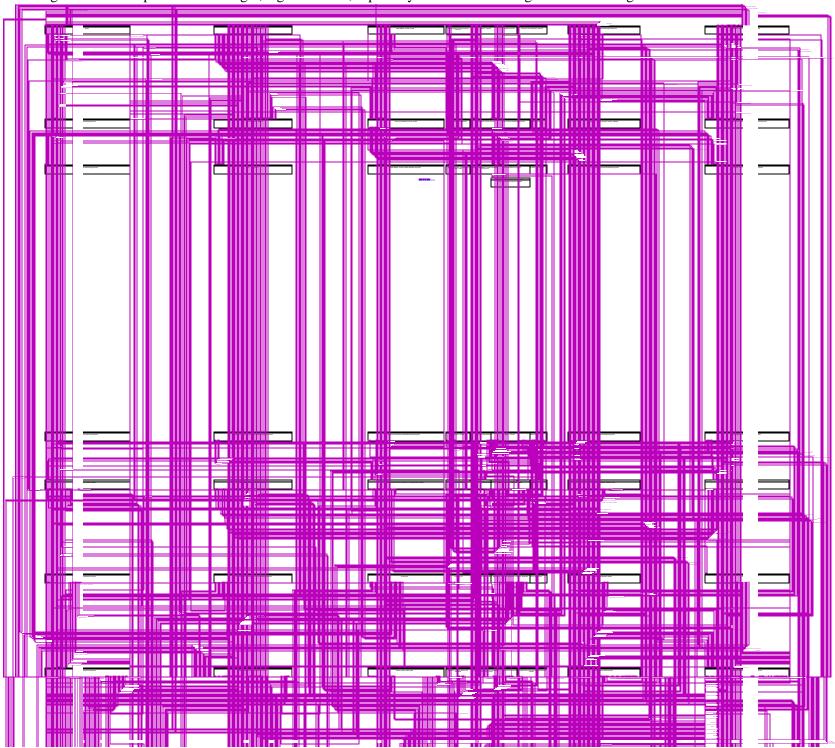




Architecture Element: TravInfo and Regional Archive System

## Information Flows Diagram (Existing Flows Only On This Page, Planned Flows Only On the Following Page)

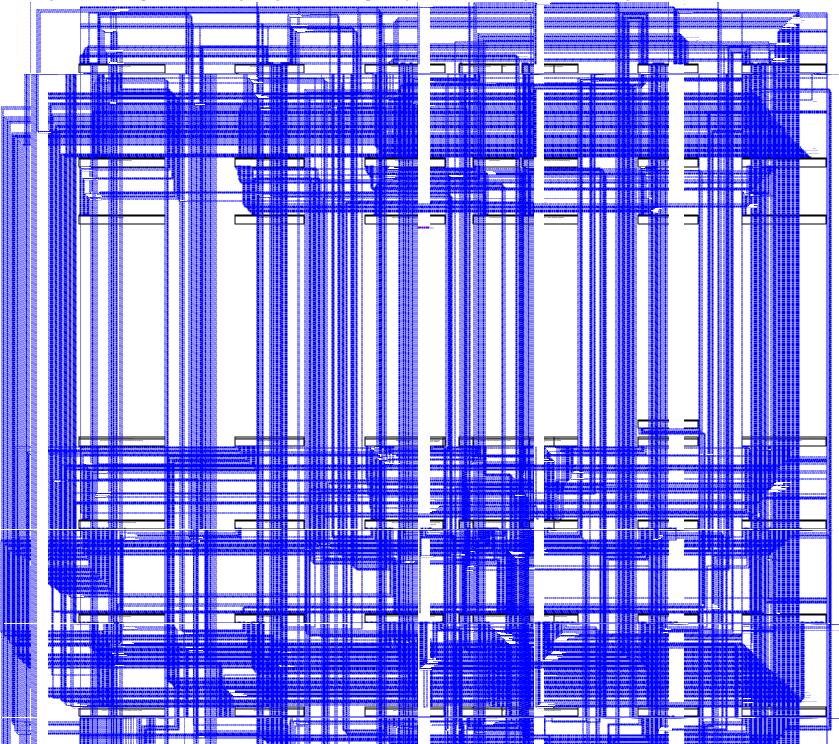
This diagram is also be provided in a larger, legible format, separately from the other diagrams for this Regional ITS Architecture.



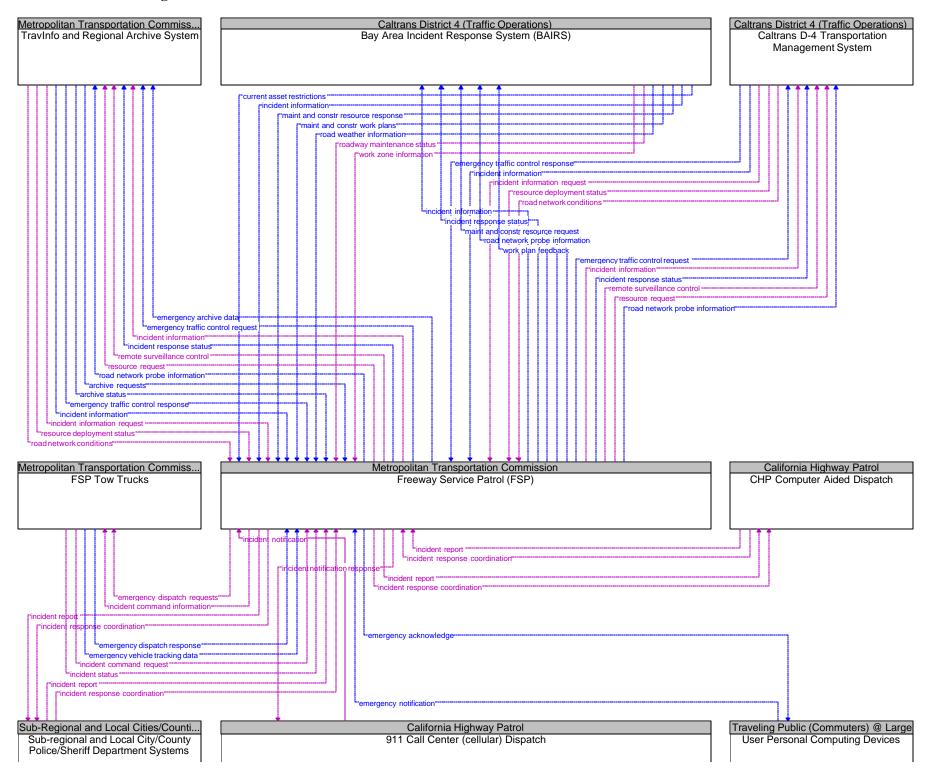
Architecture Element: TravInfo and Regional Archive System

Information Flows Diagram (Planned Flows Only On This Page, Existing Flows Only On the Preceding Page)

This diagram is also be provided in a larger, legible format, separately from the other diagrams for this Regional ITS Architecture.



Stakeholder: **Metropolitan Transportation Commission** Architecture Element: Freeway Service Patrol (FSP) **Interconnect Diagram** California Highway Patrol Caltrans District 4 (Traffic Operations) Caltrans District 4 (Traffic Operations) Bay Area Incident Response System Caltrans D-4 Transportation 911 Call Center (cellular) Dispatch (BAIRS) Management System California Highway Patrol Metropolitan Transportation Commiss... Metropolitan Transportation Commiss... **CHP Computer Aided Dispatch** Freeway Service Patrol (FSP) FSP Tow Trucks Sub-Regional and Local Cities/Counti... Metropolitan Transportation Commiss... Traveling Public (Commuters) @ Large Sub-regional and Local City/County TravInfo and Regional Archive System **User Personal Computing Devices** Police/Sheriff Department Systems



Architecture Element: FSP Tow Trucks
Interconnect Diagram

Caltrans District 4 (Traffic Operations)
Caltrans D-4 TMC Roadside
Equipment (TOS)

CHP Computer Aided Dispatch
Freeway Service Patrol (FSP)

Metropolitan Transportation Commiss...
FSP Tow Trucks

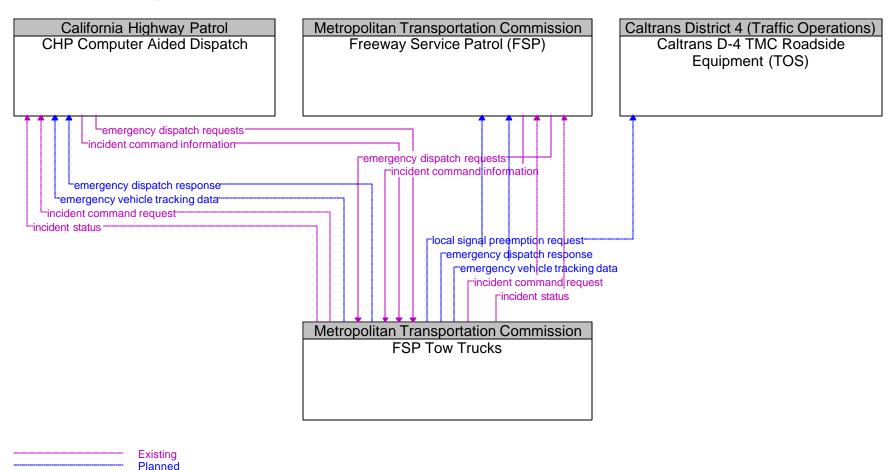
**Metropolitan Transportation Commission** 

Stakeholder:

Planned

Stakeholder: Metropolitan Transportation Commission

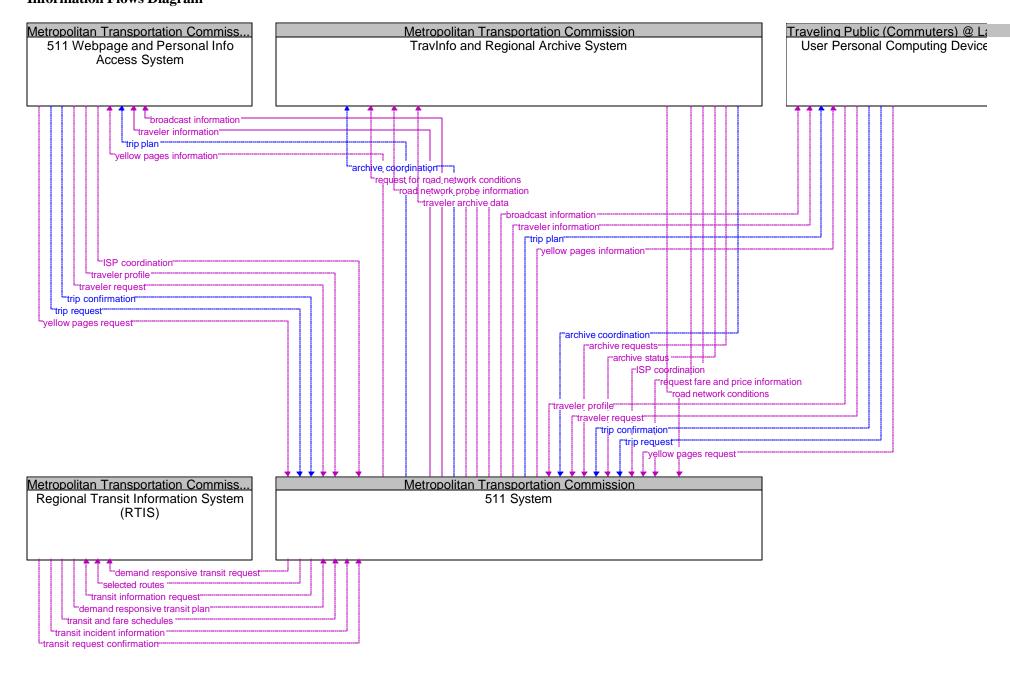
Architecture Element: **FSP Tow Trucks** 



Stakeholder: **Metropolitan Transportation Commission** Architecture Element: 511 System **Interconnect Diagram** Metropolitan Transportation Commiss... Metropolitan Transportation Commiss... Metropolitan Transportation Commiss... 511 Webpage and Personal Info Regional Transit Information System TravInfo and Regional Archive System Access System (RTIS) Metropolitan Transportation Commiss... Traveling Public (Commuters) @ Large **User Personal Computing Devices** 511 System

Existing

Architecture Element: 511 System Information Flows Diagram



Stakeholder: Architecture Element: 511 Webpage and Personal Info Access System
Interconnect Diagram

Metropolitan Transportation Commiss...

Media

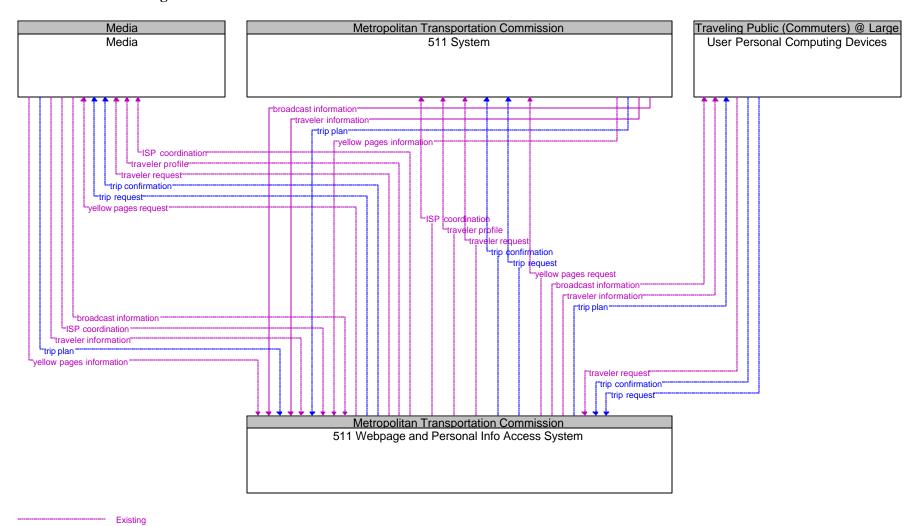
Traveling Public (Commuters) @ Large
User Personal Computing Devices

Metropolitan Transportation Commiss...

511 Webpage and Personal Info
Access System

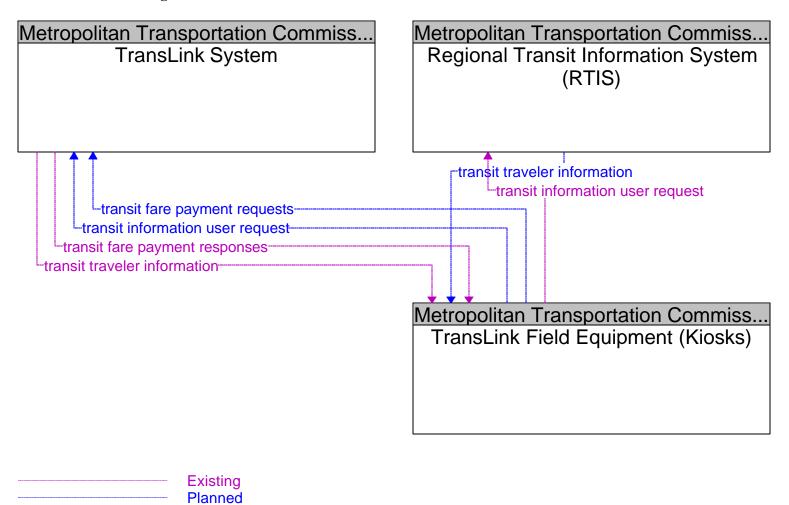
Existing
Planned

Stakeholder: Metropolitan Transportation Commission
Architecture Element: 511 Webpage and Personal Info Access System



Stakeholder: **Metropolitan Transportation Commission** Architecture Element: TransLink Field Equipment (Kiosks) **Interconnect Diagram** Metropolitan Transportation Commiss... Metropolitan Transportation Commiss... Regional Transit Information System TransLink System (RTIS) Metropolitan Transportation Commiss... TransLink Field Equipment (Kiosks) Existing **Planned** 

Stakeholder: Metropolitan Transportation Commission
Architecture Element: TransLink Field Equipment (Kiosks)

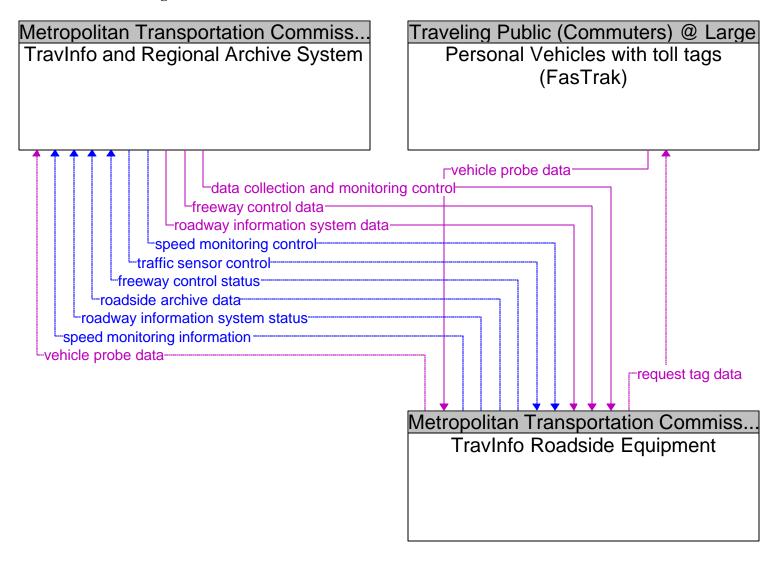


**Metropolitan Transportation Commission** Stakeholder: Architecture Element: TravInfo Roadside Equipment **Interconnect Diagram** Metropolitan Transportation Commiss... Traveling Public (Commuters) @ Large Personal Vehicles with toll tags TravInfo and Regional Archive System (FasTrak) Metropolitan Transportation Commiss... TravInfo Roadside Equipment Existing

**Planned** 

Stakeholder: Metropolitan Transportation Commission

Architecture Element: TravInfo Roadside Equipment

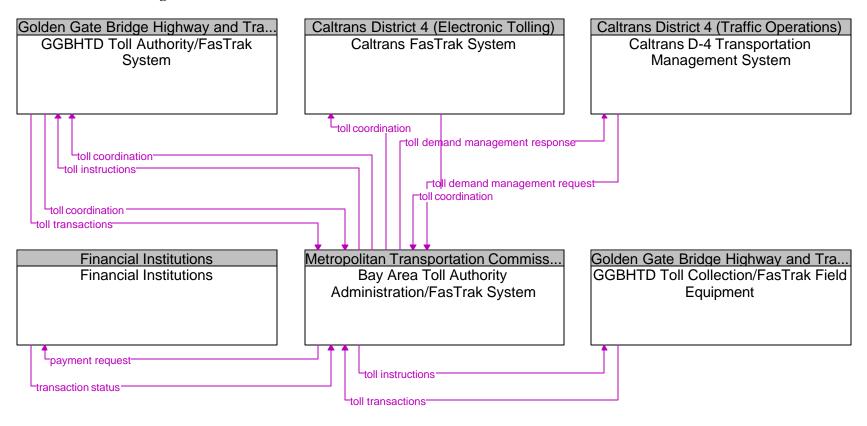


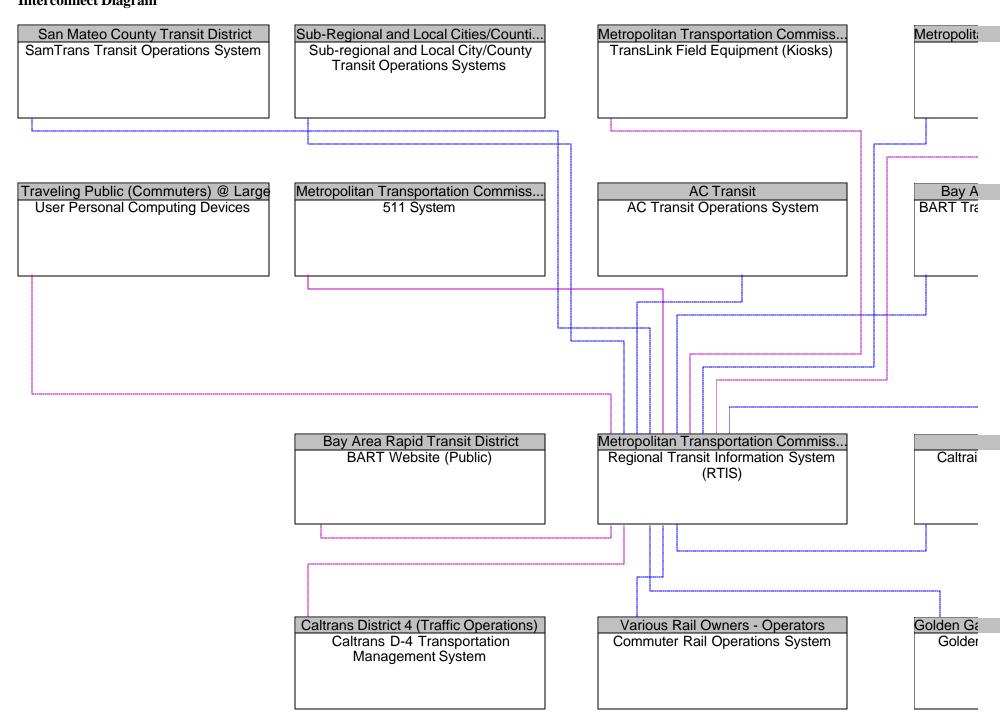
Stakeholder: **Metropolitan Transportation Commission** Architecture Element: Bay Area Toll Authority Administration/FasTrak System **Interconnect Diagram** Caltrans District 4 (Traffic Operations) Financial Institutions Caltrans District 4 (Electronic Tolling) Caltrans D-4 Transportation Caltrans FasTrak System Financial Institutions Management System Metropolitan Transportation Commiss... Golden Gate Bridge Highway and Tra... Golden Gate Bridge Highway and Tra... GGBHTD Toll Authority/FasTrak Bay Area Toll Authority GGBHTD Toll Collection/FasTrak Field Administration/FasTrak System System Equipment

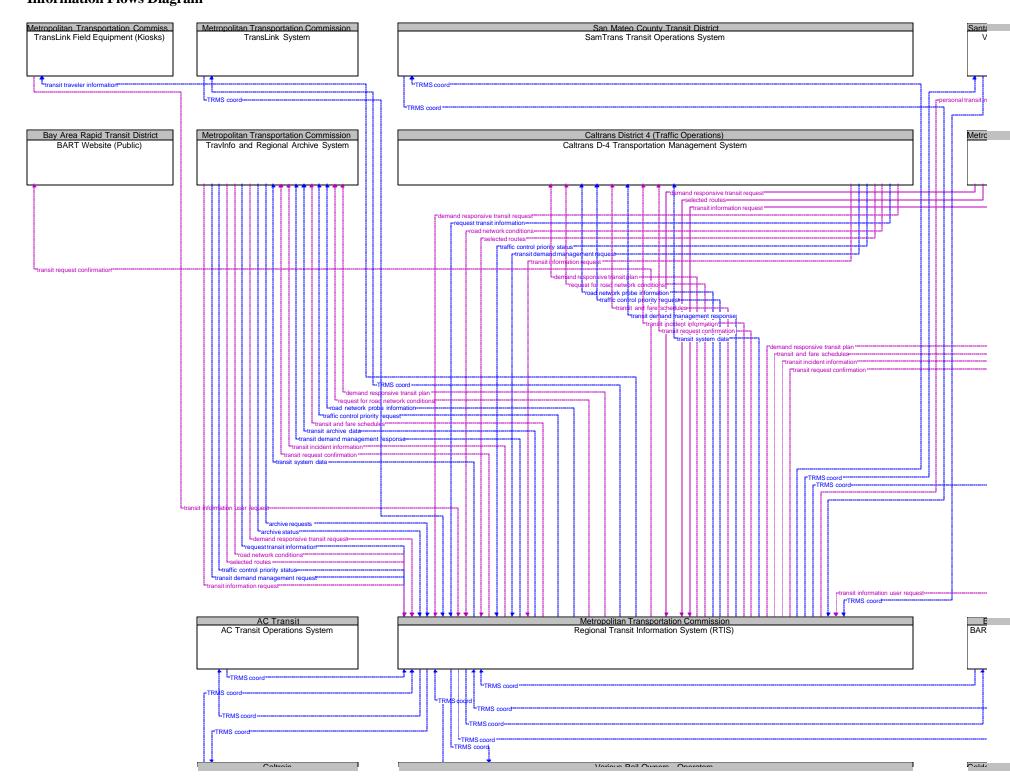
Existing Planned

Stakeholder: Metropolitan Transportation Commission

Architecture Element: Bay Area Toll Authority Administration/FasTrak System



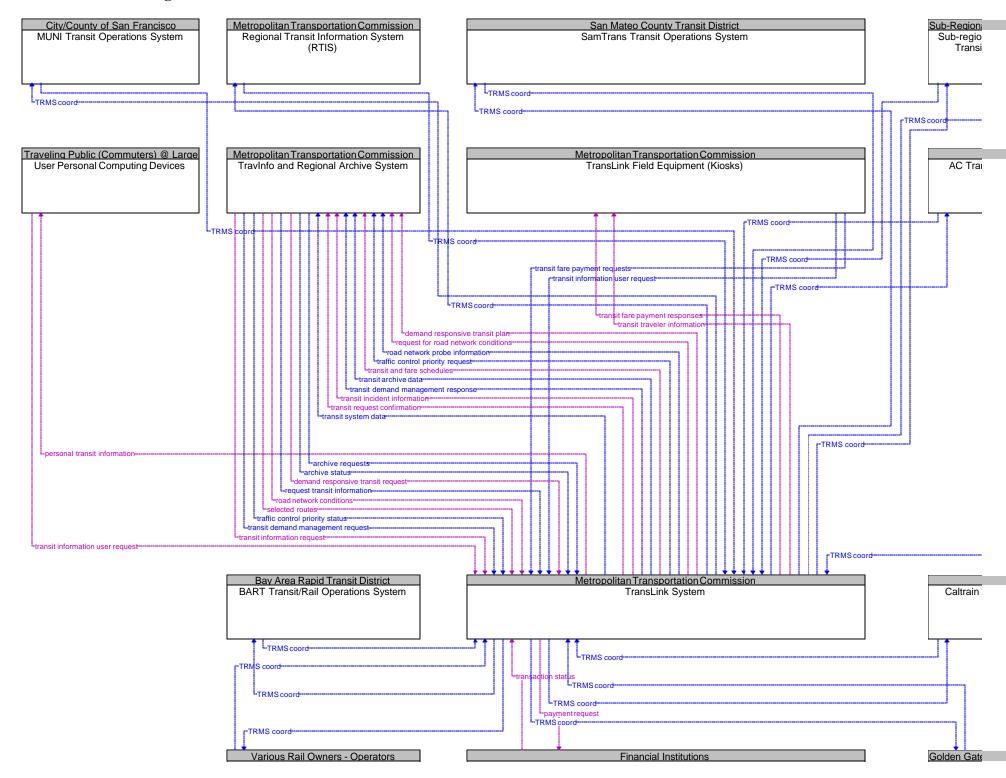




**Interconnect Diagram** San Mateo County Transit District Sub-Regional and Local Cities/Counti... Metropolitan Transportation Commiss... Metropolita SamTrans Transit Operations System Sub-regional and Local City/County TransLink Field Equipment (Kiosks) TravInfo ai Transit Operations Systems Santa Clara Valley Transportation Au... AC Transit Bay Area Rapid Transit District VTA Transit Operations System BART Transit/Rail Operations System **AC Transit Operations System** Caltrair Various Rail Owners - Operators Metropolitan Transportation Commiss... Commuter Rail Operations System TransLink System Golden Gate Bridge Highway and Tra... City/County of San Francisco Metropolita Golden Gate Transit Operations MUNI Transit Operations System Regional System

Architecture Element:

TransLink System



Stakeholder:
Architecture Element:
Interconnect Diagram

California Highway Patrol
CHP Computer Aided Dispatch

Metropolitan Transportation Commission
Bay Area Call Box Call Answering Center (CAC)

Metropolitan Transportation Commiss...
Bay Area Call Box Call Answering
Center (CAC)

Existing

**Planned** 

Stakeholder: Architecture Element: Bay Area Call Box Call Answering Center (CAC)
Information Flows Diagram

California Highway Patrol
CHP Computer Aided Dispatch

Chincident notification response

Metropolitan Transportation Commiss...

Bay Area Call Box Call Answering Center (CAC)

Metropolitan Transportation Commiss...

Bay Area Call Box Call Answering Center (CAC)

**Planned** 

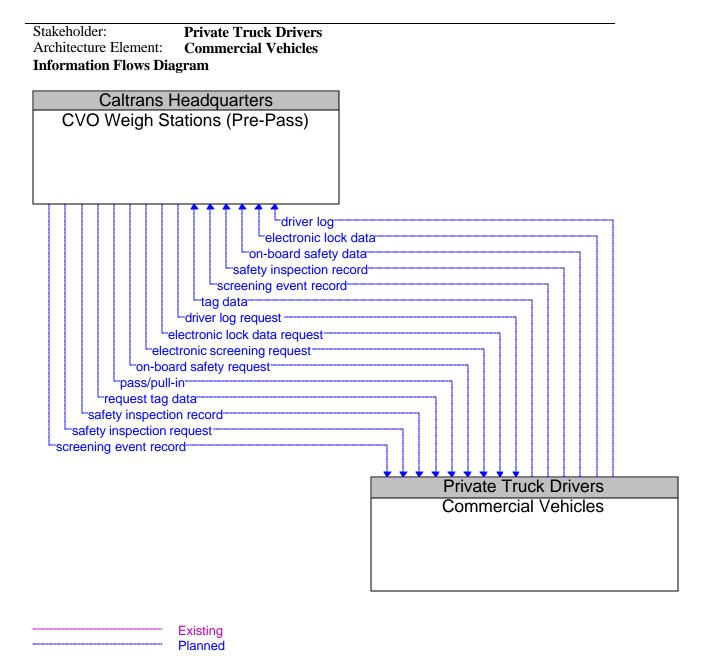
Stakeholder:	Partners for Advanced Transit and Highways				
Architecture Element:	Performance Monitoring System (PeMS)				
<b>Interconnect Diagram</b>					
Partners for Adva	anced Transit and Hi				
	Monitoring System				
(F	PeMS)				
			]		
			Coltrono District 4 (Troffic Operations)		
		C	Caltrans District 4 (Traffic Operations)		
			Caltrans D-4 Transportation		
			Management System		

Existing Planned

Stakeholder: Partners for Advanced Transit and Highways Architecture Element: **Performance Monitoring System (PeMS) Information Flows Diagram** Partners for Advanced Transit and Hi... Performance Monitoring System (PeMS) archive management requeststraffic archive datatraffic control coordination traffic information coordinationtraveler archive dataarchive management data archive requests-Larchive status-Ltraffic control coordinationtraffic information coordination-Caltrans District 4 (Traffic Operations) Caltrans D-4 Transportation Management System Existing

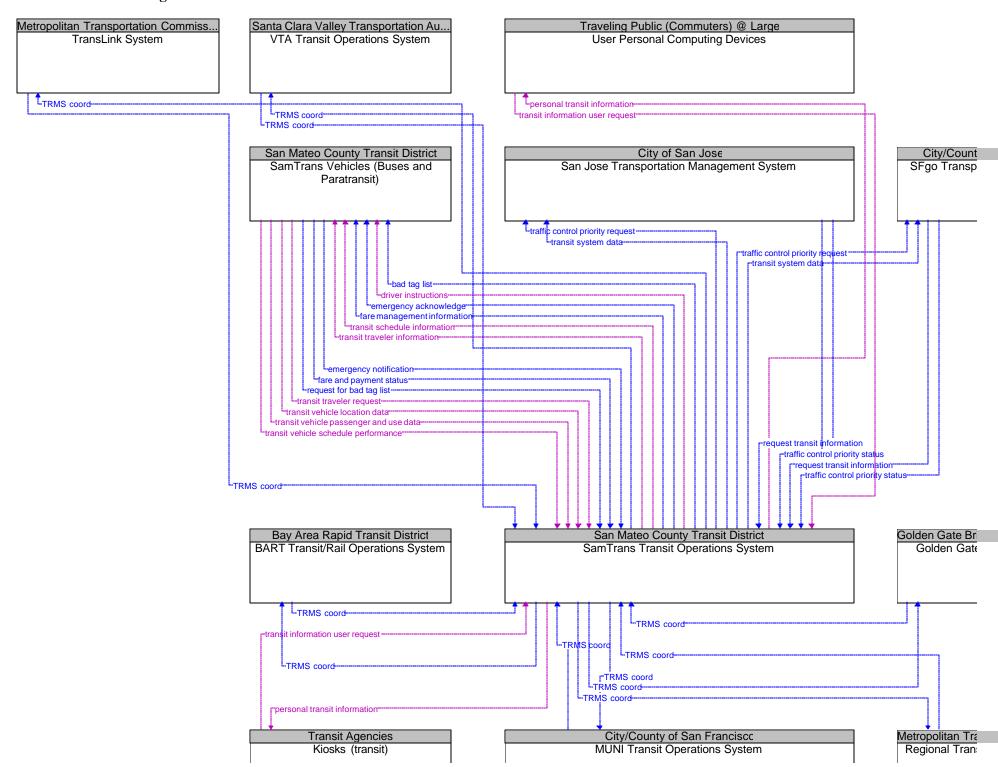
**Planned** 

Stakeholder: Architecture Element:	Private Truck Drivers Commercial Vehicles		
<b>Interconnect Diagram</b>			
Caltrans Headquarters CVO Weigh Stations (Pre-Pass)			
		Private Truck Drivers	
		Commercial Vehicles	
	Existing Planned		



**SamTrans Transit Operations System Interconnect Diagram** Metropolitan Transportation Commiss... Traveling Public (Commuters) @ Large Santa Clara Valley Transportation Au.. TransLink System User Personal Computing Devices VTA Transit Operations System Bay Area Rapid Transit District Golden Gate Bridge Highway and Tra.. BART Transit/Rail Operations System Golden Gate Transit Operations System City/County of San Francisco San Mateo County Transit District MUNI Transit Operations System SamTrans Transit Operations System San Mateo County Transit District City of San Jose SamTrans Vehicles (Buses and San Jose Transportation Managemen Paratransit) System

Architecture Element:

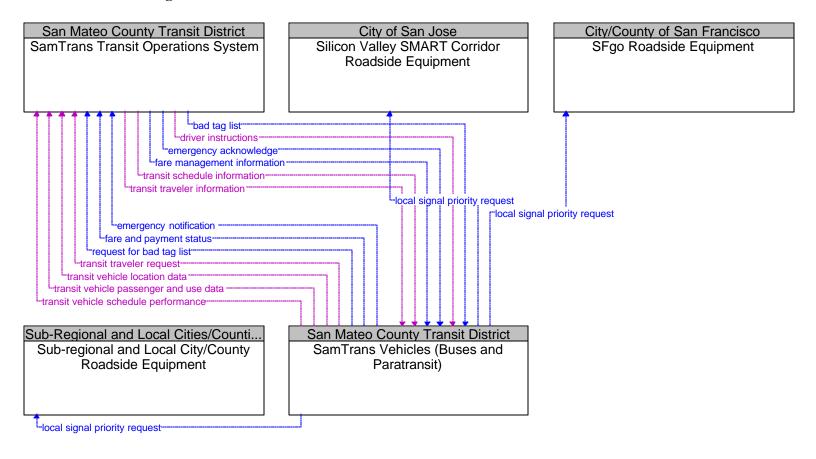


Stakeholder: San Mateo County Transit District Architecture Element: **SamTrans Vehicles (Buses and Paratransit) Interconnect Diagram** San Mateo County Transit District City/County of San Francisco City of San Jose SamTrans Transit Operations System SFgo Roadside Equipment Silicon Valley SMART Corridor Roadside Equipment Sub-Regional and Local Cities/Counti... San Mateo County Transit District Sub-regional and Local City/County SamTrans Vehicles (Buses and Roadside Equipment Paratransit)

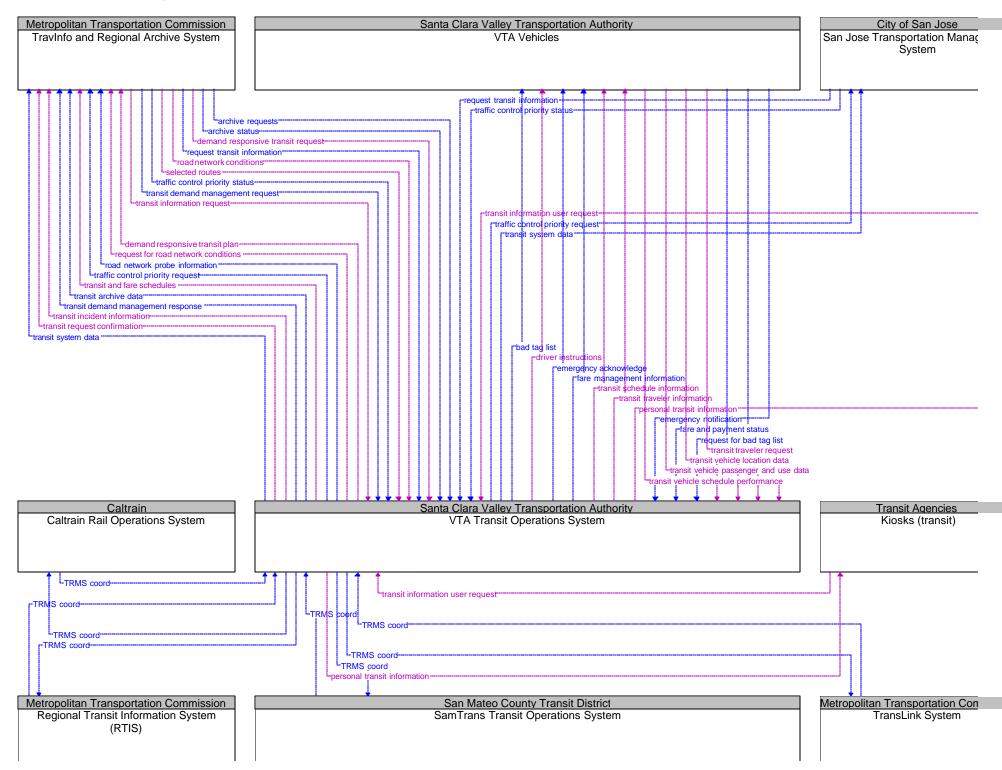
----- Existing Planne

Stakeholder: San Mateo County Transit District

Architecture Element: SamTrans Vehicles (Buses and Paratransit)



Stakeholder: Santa Clara Valley Transportation Authority **VTA Transit Operations System** Architecture Element: **Interconnect Diagram** Metropolitan Transportation Commiss... Regional Transit Information System Caltrain Transit Agencies Santa Clara Valley Transportation Au... Caltrain Rail Operations System Kiosks (transit) VTA Vehicles (RTIS) San Mateo County Transit District Santa Clara Valley Transportation Au... City of San Jose SamTrans Transit Operations System VTA Transit Operations System San Jose Transportation Management System Metropolitan Transportation Commiss... Traveling Public (Commuters) @ Large Metropolitan Transportation Commiss... TransLink System TravInfo and Regional Archive System User Personal Computing Devices Existing



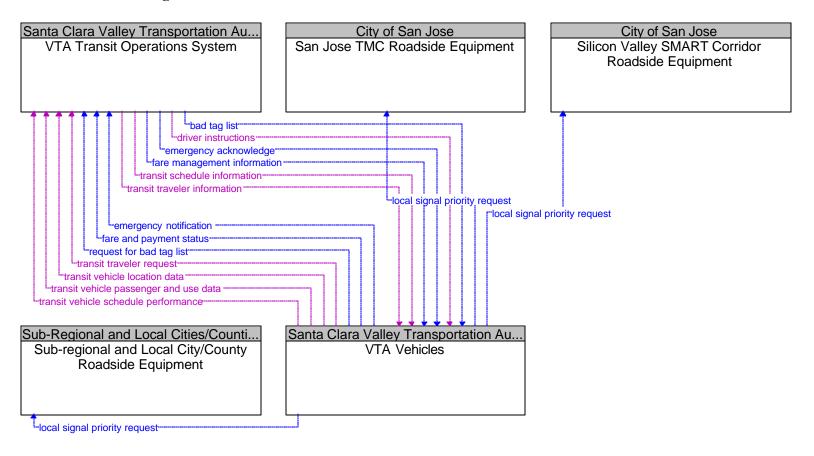
Stakeholder: Santa Clara Valley Transportation Authority Architecture Element: **VTA Vehicles Interconnect Diagram** City of San Jose City of San Jose Sub-Regional and Local Cities/Counti... San Jose TMC Roadside Equipment Silicon Valley SMART Corridor Sub-regional and Local City/County Roadside Equipment Roadside Equipment Santa Clara Valley Transportation Au... Santa Clara Valley Transportation Au... VTA Transit Operations System VTA Vehicles

**Planned** 

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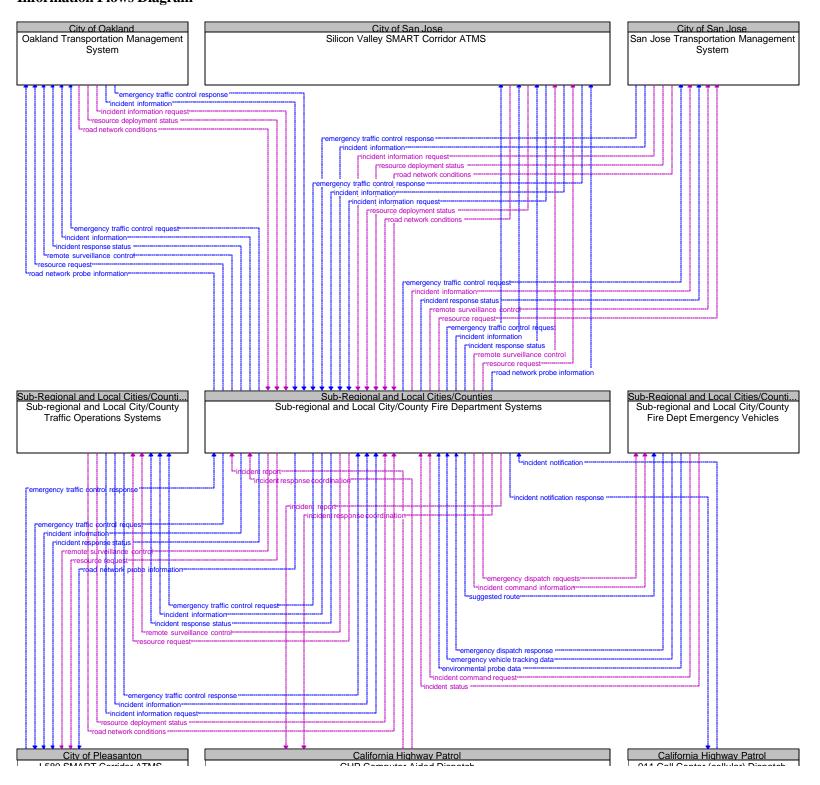
Stakeholder: Santa Clara Valley Transportation Authority

Architecture Element: VTA Vehicles

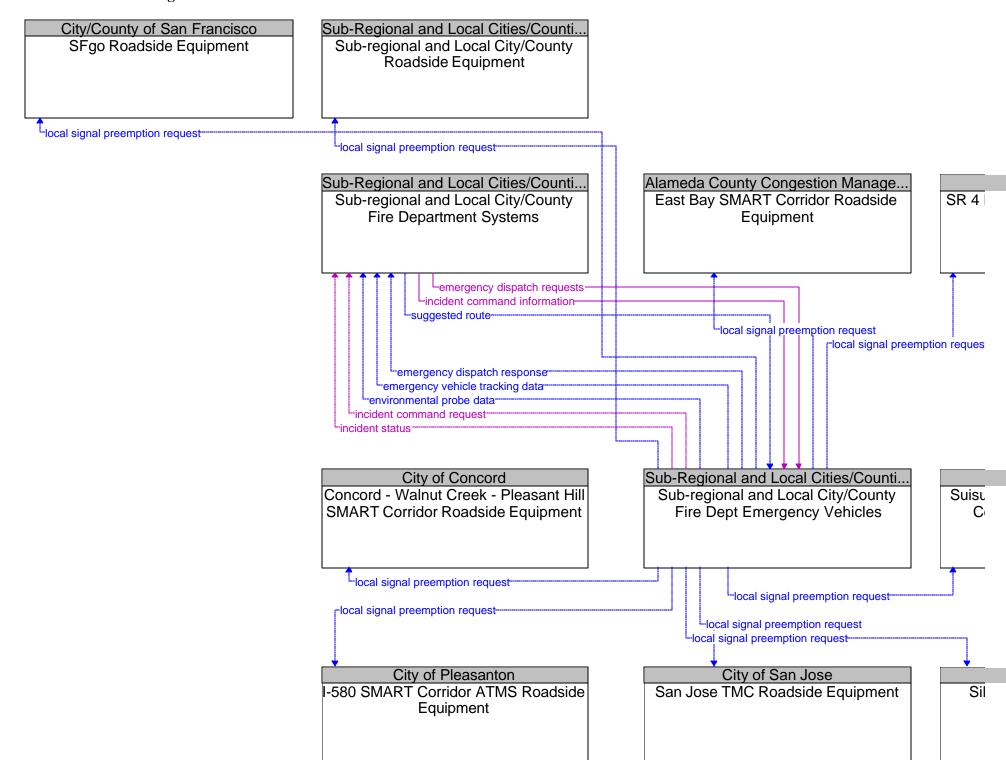


Stakeholder: **Sub-Regional and Local Cities/Counties** Architecture Element: **Sub-regional and Local City/County Fire Department Systems Interconnect Diagram** California Highway Patrol California Highway Patrol City of Pleasanton CHP Computer Aided Dispatch I-580 SMART Corridor ATMS 911 Call Center (cellular) Dispatch Sub-Regional and Local Cities/Counti... City of San Jose City of Oakland Oakland Transportation Management Sub-regional and Local City/County San Jose Transportation Management System Fire Department Systems System City of San Jose Sub-Regional and Local Cities/Counti... Sub-Regional and Local Cities/Counti... Silicon Valley SMART Corridor ATMS Sub-regional and Local City/County Sub-regional and Local City/County Fire Dept Emergency Vehicles **Traffic Operations Systems** 

## Architecture Element: Sub-regional and Local City/County Fire Department Systems Information Flows Diagram



Stakeholder: **Sub-Regional and Local Cities/Counties** Architecture Element: Sub-regional and Local City/County Fire Dept Emergency Vehicles **Interconnect Diagram** Sub-Regional and Local Cities/Counti... City of Fairfield Sub-regional and Local City/County Suisun - Fairfield - Vacaville SMART Roadside Equipment Corridor Roadside Equipment City of Concord Alameda County Congestion Manage... City of Pleasanton East Bay SMART Corridor Roadside -580 SMART Corridor ATMS Roadside Concord - Walnut Creek - Pleasant Hill SMART Corridor Roadside Equipment Equipment Equipment Sub-Regional and Local Cities/Counti...
Sub-regional and Local City/County City of San Jose City/County of San Francisco San Jose TMC Roadside Equipment SFgo Roadside Equipment Fire Dept Emergency Vehicles City of San Jose City of Antioch Sub-Regional and Local Cities/Counti... Silicon Valley SMART Corridor SR 4 East SMART Corridor Roadside Sub-regional and Local City/County Roadside Equipment Fire Department Systems Equipment

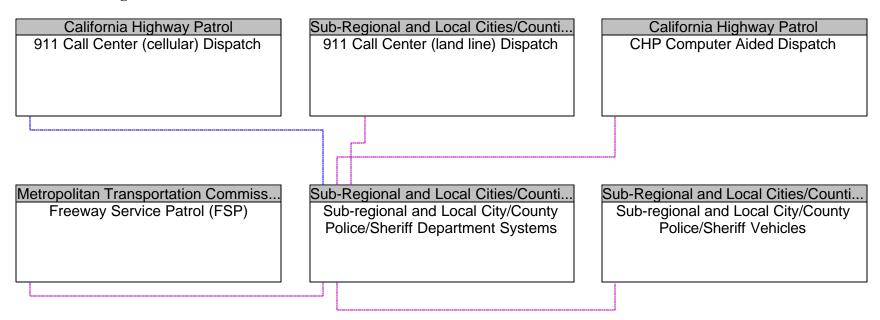


Stakeholder: Sub-Regional and Local Cities/Counties

Architecture Element: Sub-regional and Local City/County Police/Sheriff Department

**Systems** 

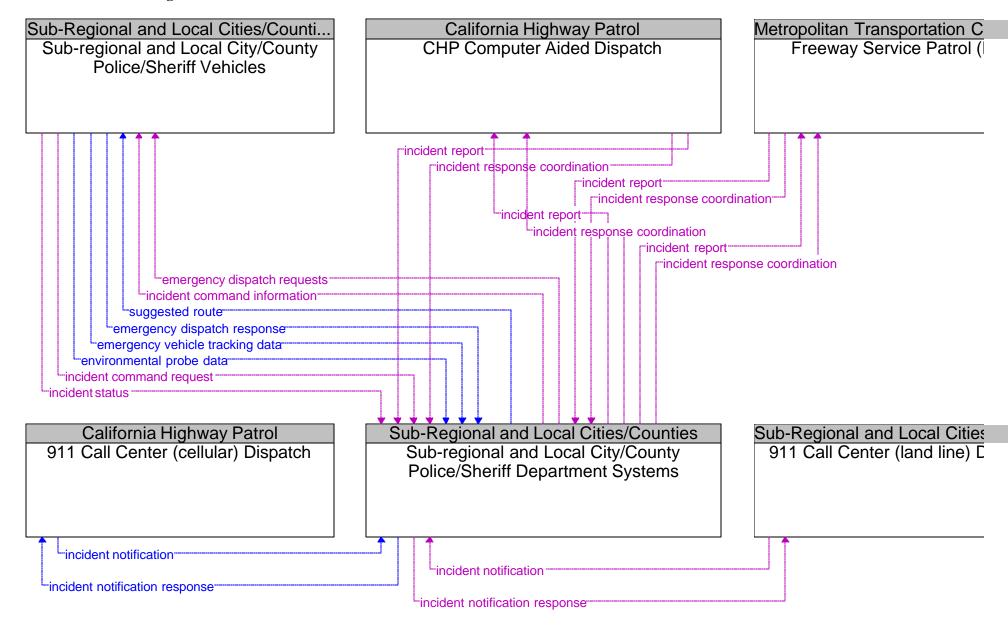
#### **Interconnect Diagram**



Existing

Architecture Element: Sub-regional and Local City/County Police/Sheriff Department

**Systems** 



Stakeholder: Sub-Regional and Local Cities/Counties

Architecture Element: Sub-regional and Local City/County Police/Sheriff Vehicles

**Interconnect Diagram** 

Sub-Regional and Local Cities/Counti...
Sub-regional and Local City/County
Police/Sheriff Vehicles

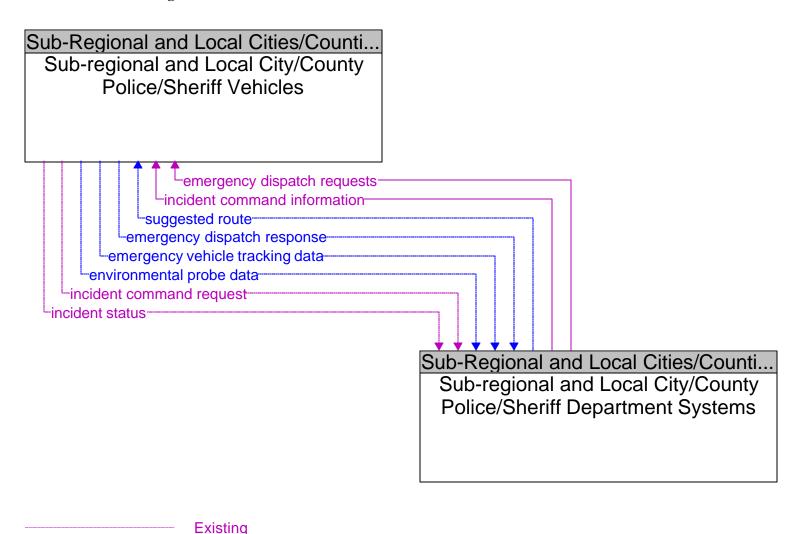
Sub-Regional and Local Cities/Counti...
Sub-regional and Local City/County
Police/Sheriff Department Systems

Existing
Planned

Stakeholder: Sub-Regional and Local Cities/Counties

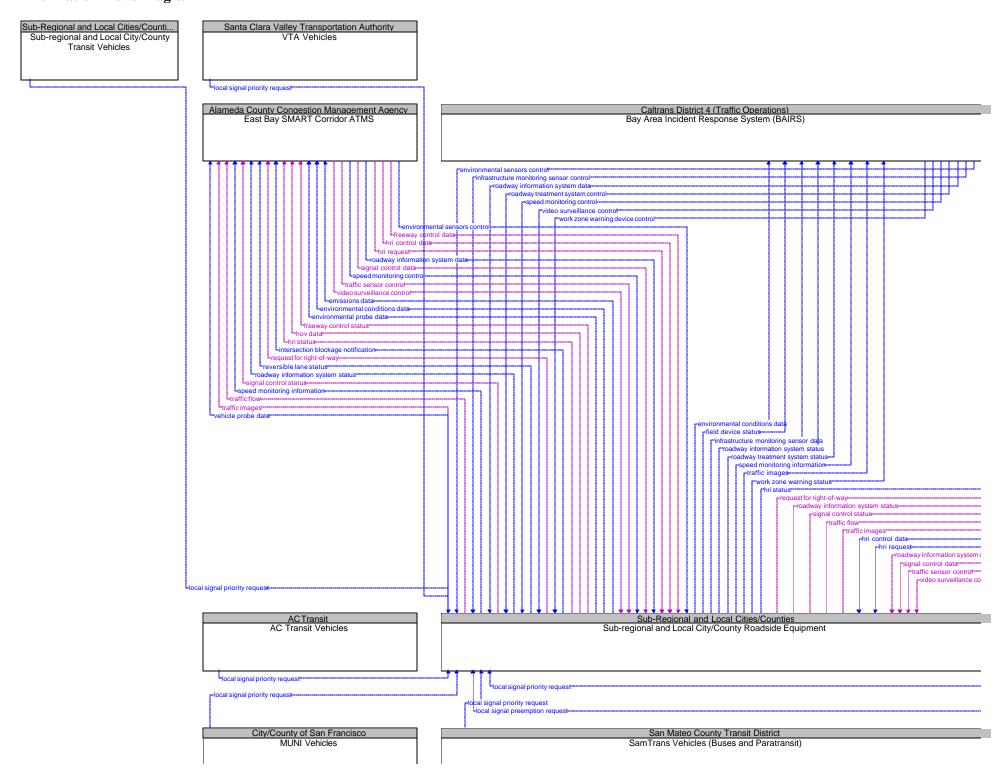
**Planned** 

Architecture Element: Sub-regional and Local City/County Police/Sheriff Vehicles

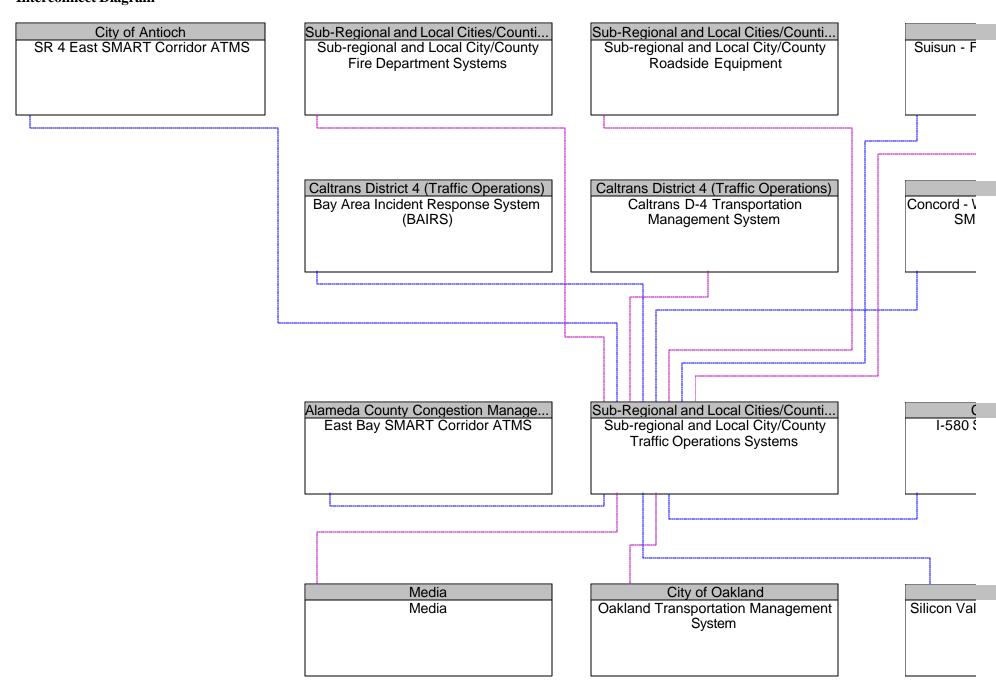


Architecture Element: Sub-regional and Local City/County Roadside Equipment **Interconnect Diagram** Santa Clara Valley Transportation Au...
VTA Vehicles Sub-Regional and Local Cities/Counti... Sub-regional and Local City/County **Transit Vehicles AC Transit** Caltrans District 4 (Traffic Operatio AC Transit Vehicles Bay Area Incident Response Syste (BAIRS) Alameda County Congestion Manage... Sub-Regional and Local Cities/Cour East Bay SMART Corridor ATMS Sub-regional and Local City/Coun Roadside Equipment San Mateo County Transit District Sub-Regional and Local Cities/Cour SamTrans Vehicles (Buses and Sub-regional and Local City/Coun Fire Dept Emergency Vehicles Paratransit)

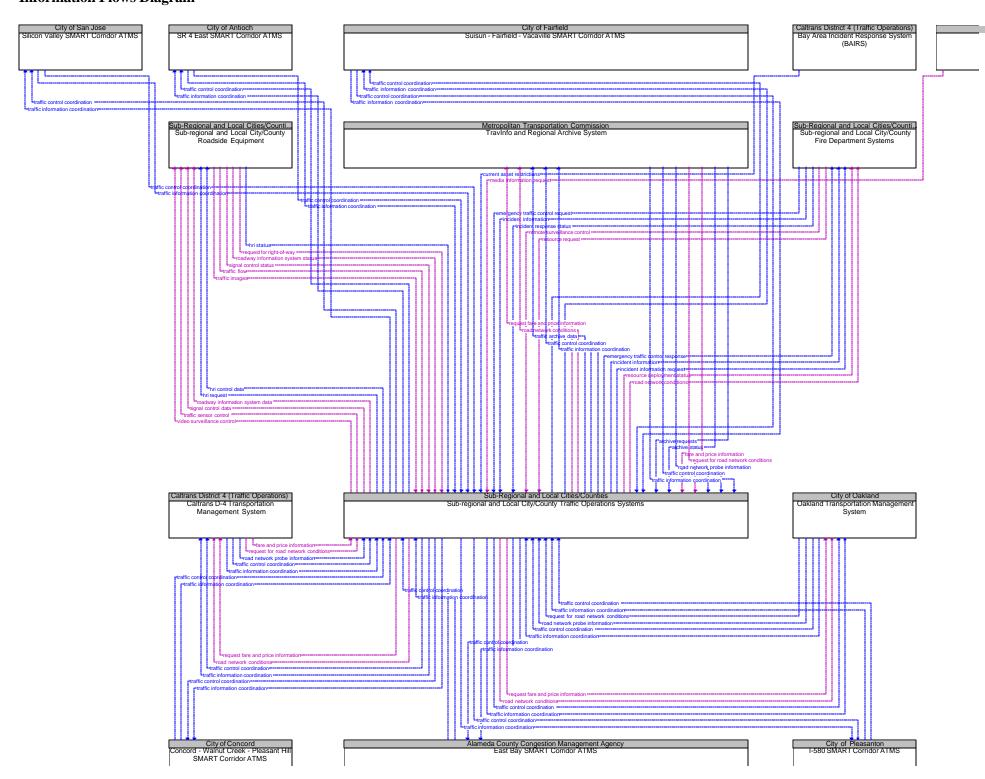
## Architecture Element: Sub-regional and Local City/County Roadside Equipment Information Flows Diagram



Architecture Element: Sub-regional and Local City/County Traffic Operations Systems
Interconnect Diagram

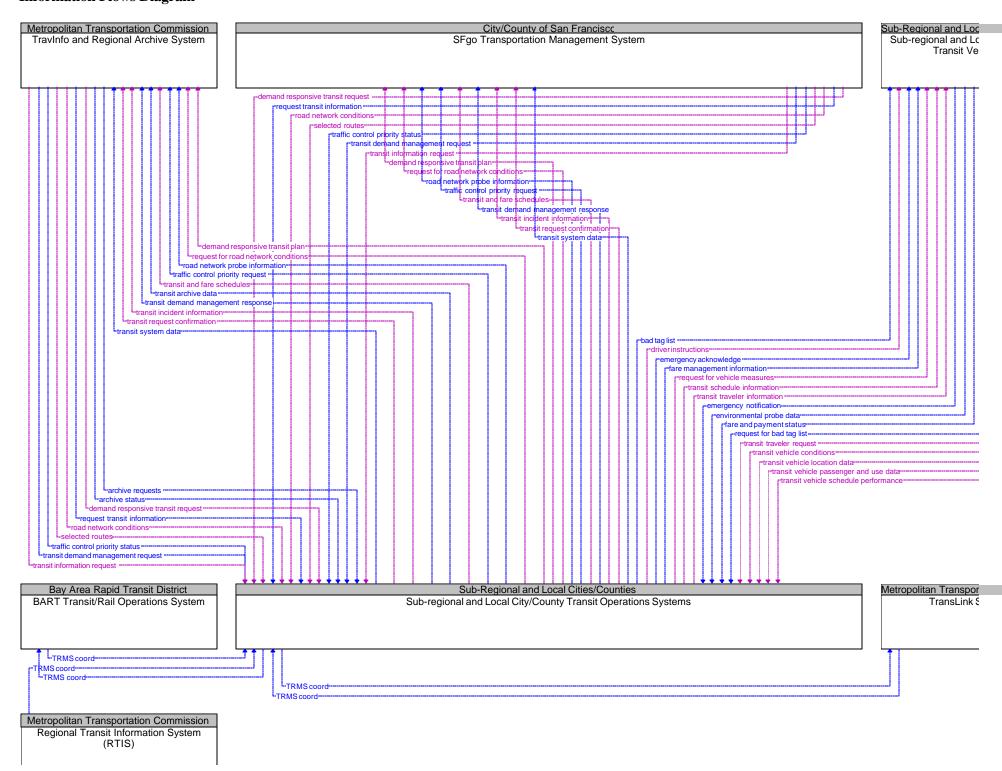


----- Existing ----- Planned



Stakeholder: **Sub-Regional and Local Cities/Counties** Architecture Element: Sub-regional and Local City/County Transit Operations Systems **Interconnect Diagram** Metropolitan Transportation Commiss... Bay Area Rapid Transit District City/County of San Francisco BART Transit/Rail Operations System Regional Transit Information System SFgo Transportation Management (RTIS) System Sub-Regional and Local Cities/Counti... Sub-Regional and Local Cities/Counti... Metropolitan Transportation Commiss... Sub-regional and Local City/County Sub-regional and Local City/County TransLink System Transit Vehicles **Transit Operations Systems** Metropolitan Transportation Commiss... TravInfo and Regional Archive System **Planned** 

# Architecture Element: Sub-regional and Local City/County Transit Operations Systems Information Flows Diagram



Stakeholder: Sub-Regional and Local Cities/Counties
Architecture Element: Sub-regional and Local City/County Transit Vehicles
Interconnect Diagram

City of Oakland
Oakland TMC Roadside Equipment
Oakland TMC Roadside Equipment

Sub-Regional and Local Cities/Counti...
Sub-regional and Local City/County
Roadside Equipment

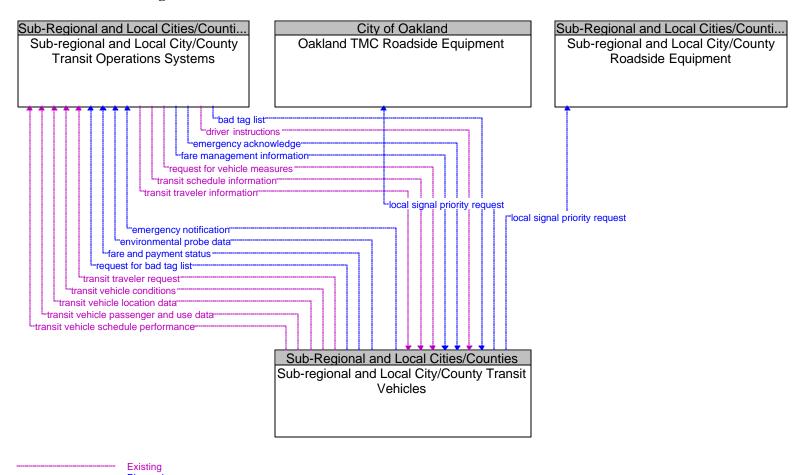
Sub-Regional and Local Cities/Counti...
Sub-regional and Local City/County
Transit Operations Systems

Sub-regional and Local Cities/Counti...
Sub-regional and Local City/County
Transit Vehicles

Existing Planned

Stakeholder: Sub-Regional and Local Cities/Counties

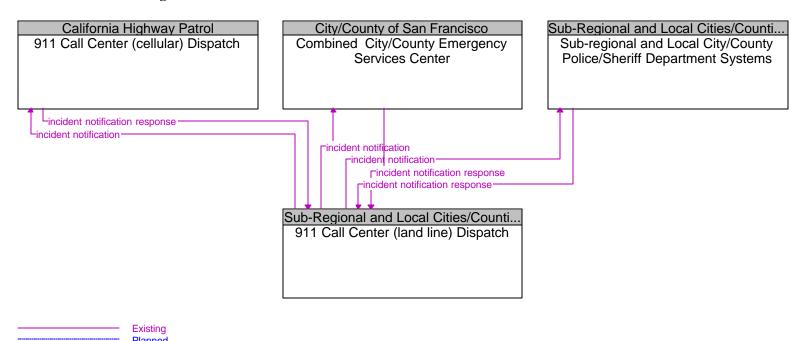
Architecture Element: Sub-regional and Local City/County Transit Vehicles



**Sub-Regional and Local Cities/Counties** Architecture Element: 911 Call Center (land line) Dispatch **Interconnect Diagram** Sub-Regional and Local Cities/Counti...
Sub-regional and Local City/County California Highway Patrol City/County of San Francisco Combined City/County Emergency
Services Center 911 Call Center (cellular) Dispatch Police/Sheriff Department Systems Sub-Regional and Local Cities/Counti...
911 Call Center (land line) Dispatch **Planned** 

Stakeholder:

Stakeholder: Sub-Regional and Local Cities/Counties
Architecture Element: 911 Call Center (land line) Dispatch



Stakeholder: Transit Agencies Architecture Element: **Kiosks (transit) Interconnect Diagram** AC Transit Golden Gate Bridge Highway and Tra... City/County of San Francisco AC Transit Operations System MUNI Transit Operations System Golden Gate Transit Operations System San Mateo County Transit District Transit Agencies Santa Clara Valley Transportation Au... VTA Transit Operations System SamTrans Transit Operations System Kiosks (transit)

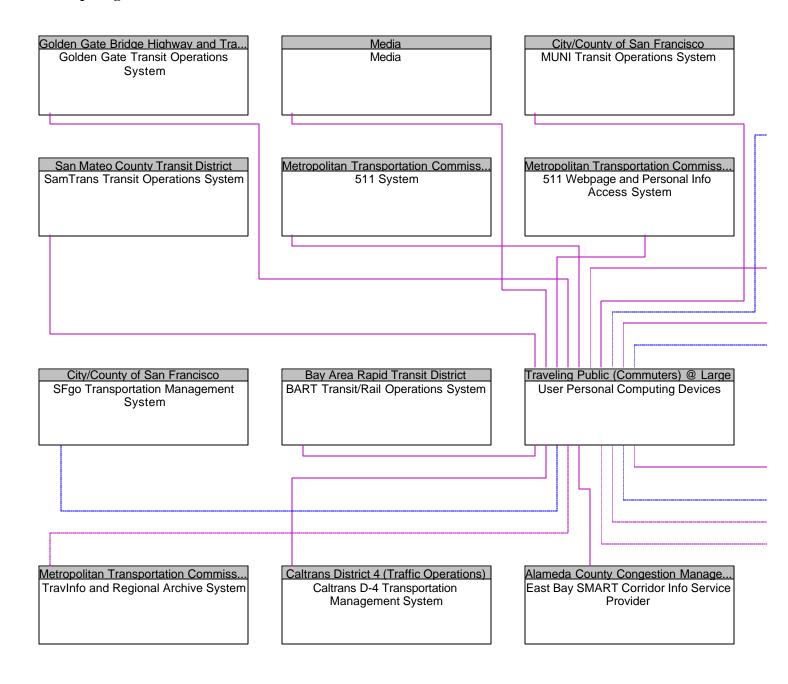
Existing Planned

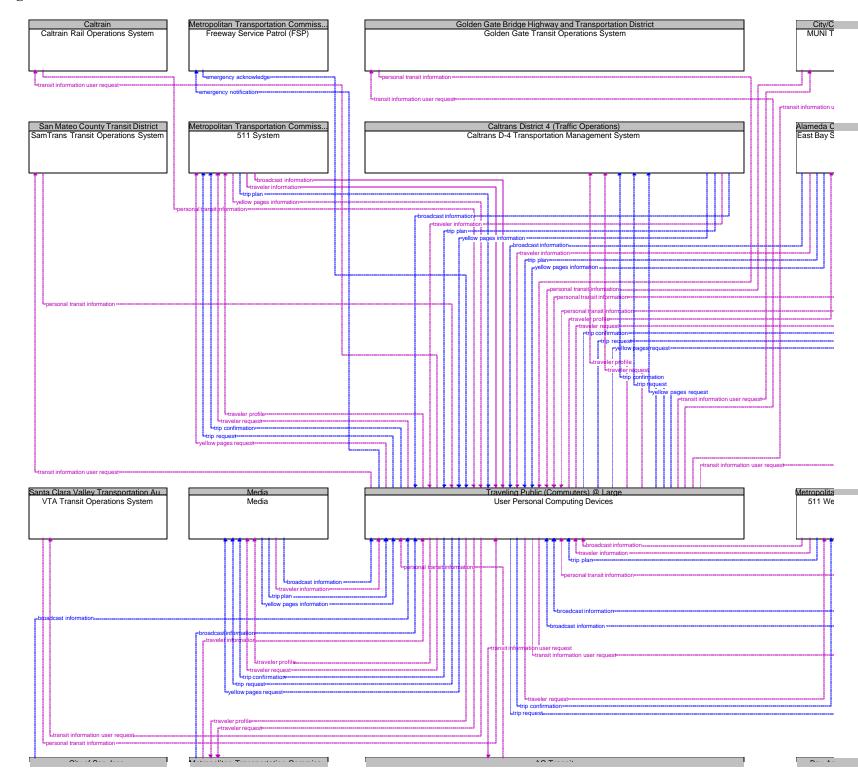
Transit Agencies Architecture Element: **Kiosks (transit) Information Flows Diagram** AC Transit Golden Gate Bridge Highway and Tra... City/County of San Francisco **AC Transit Operations System** Golden Gate Transit Operations MUNI Transit Operations System System personal transit information personal transit information Ltransit information user request rtransit information user requestrtransit information user request personal transit information San Mateo County Transit District Santa Clara Valley Transportation Au... Transit Agencies SamTrans Transit Operations System VTA Transit Operations System Kiosks (transit) Ltransit information user request Ltransit information user requestpersonal transit information-

personal transit information

Stakeholder:

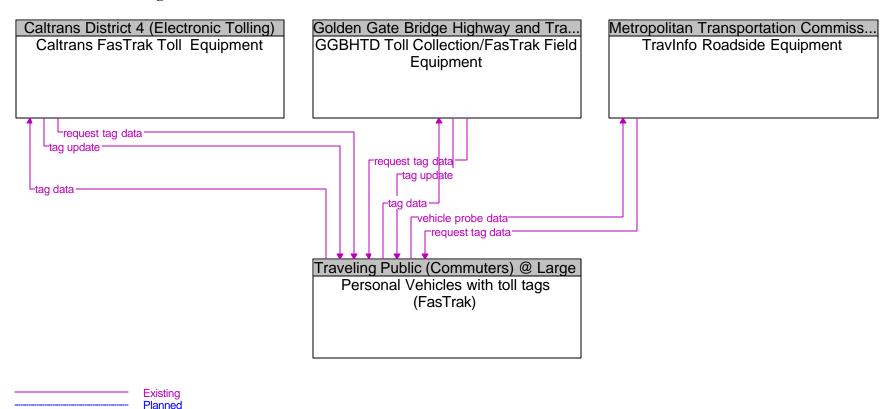
**Interconnect Diagram** 





Stakeholder: Traveling Public (Commuters) @ Large Architecture Element: **Personal Vehicles with toll tags (FasTrak) Interconnect Diagram** Caltrans District 4 (Electronic Tolling) Golden Gate Bridge Highway and Tra... Metropolitan Transportation Commiss... Caltrans FasTrak Toll Equipment GGBHTD Toll Collection/FasTrak Field TravInfo Roadside Equipment Equipment Traveling Public (Commuters) @ Large Personal Vehicles with toll tags (FasTrak) Planned

Stakeholder: Traveling Public (Commuters) @ Large
Architecture Element: Personal Vehicles with toll tags (FasTrak)



Stakeholder: Architecture Element: Commuter Rail Operations System

Bay Area Rapid Transit District
BART Transit/Rail Operations System

Caltrain Rail Operations System

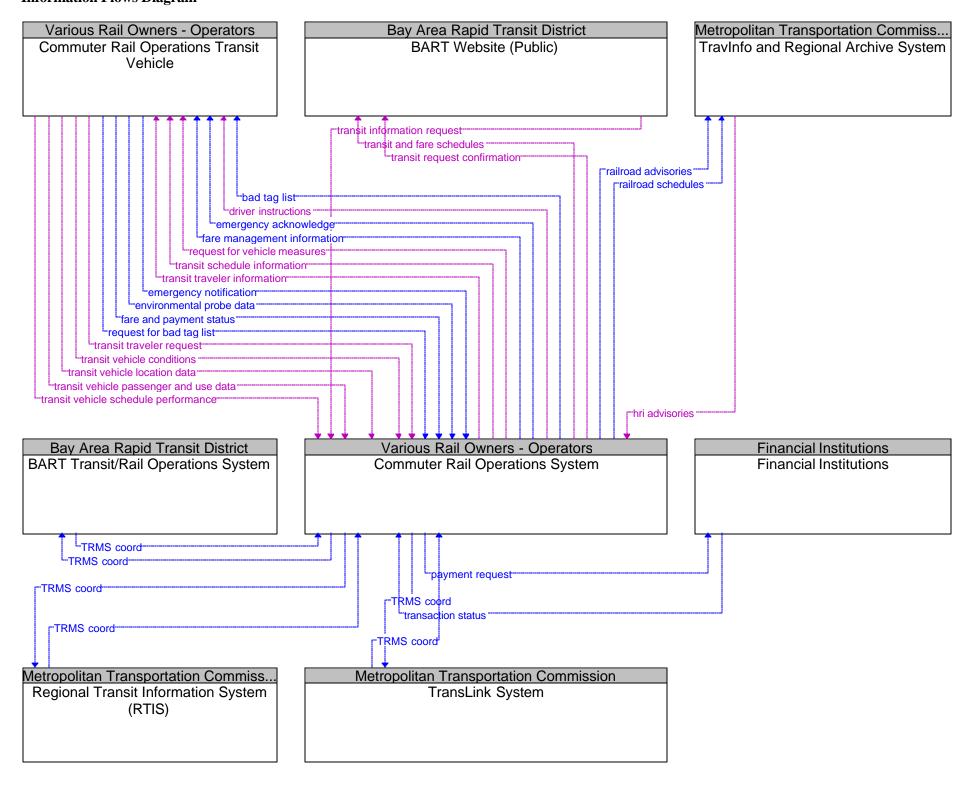
Various Rail Owners - Operators
Commuter Rail Operations System

Caltrain Rail Operations System

Various Rail Owners - Operators
Commuter Rail Operations System

Various Rail Owners - Operators
Commuter Rail Operations Transit
Vehicle

Existing
Planned

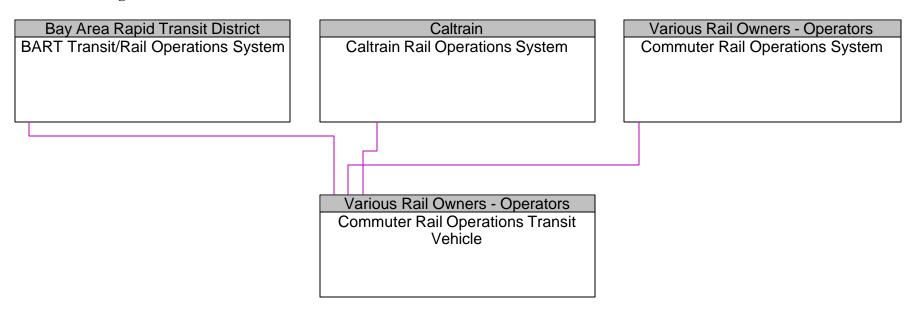


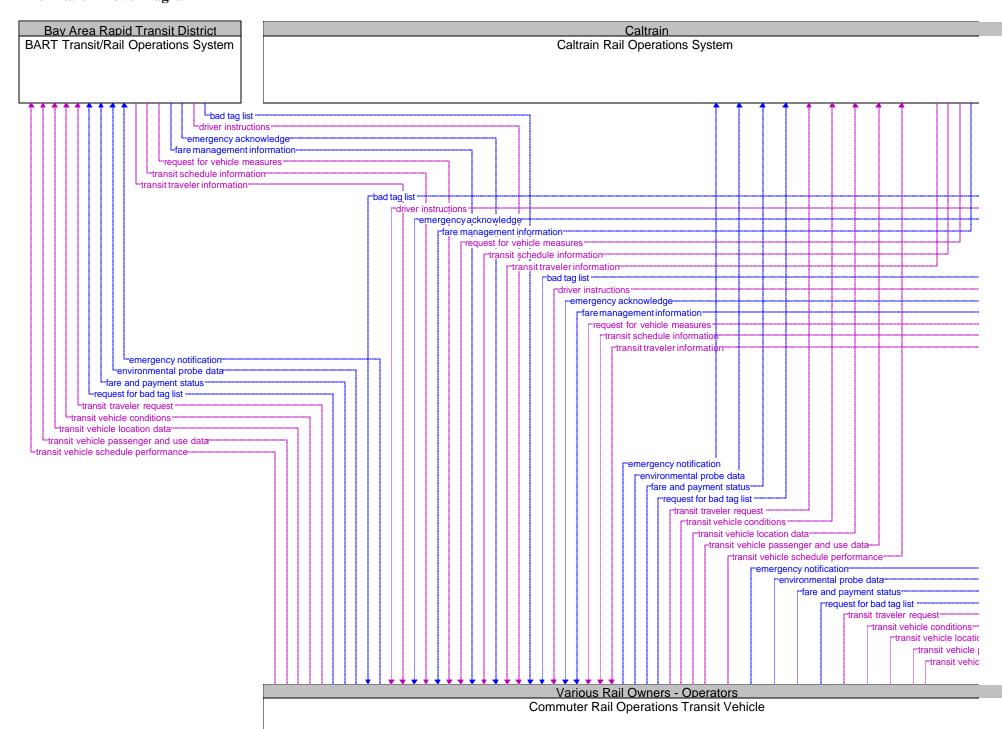
Stakeholder: Various Rail Owners - Operators

Planned

Architecture Element: Commuter Rail Operations Transit Vehicle

**Interconnect Diagram** 





bay area - interconnect & flows diagrams - website.doc